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SPLIT-INTRANSITIVITY IN SWAHILI AND HITTITE:
AN OPTIMALITY-THEORETIC PERSPECTIVE

A Dissertation

Submitted to the Graduate Faculty of
Louisiana State University and
Agricultural and Mechanical College
in partial fulfillment of the
requirements for the degree of
Doctor of Philosophy

in

The Interdepartmental Program in Linguistics

by

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B.A., Northeastern Illinois University, 2004

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December 2014

This dissertation is dedicated to
the living and loving memories of my father,
Robert J. Villa
(1944-1995)

“Often, it’s not about becoming a new person,
but becoming the person you were meant to be,
and already are, but don’t know how to be.”

-Heath L. Buckmaster,
Box of Hair: A Fairy Tale

“Just when one ordeal is over,
the next one begins.
The Monk rolled his eyes and said,
with a slight hint of a whine,
‘I’ll be fine. Don’t worry.’”

-Philip Cyscon,
The Collected Adventures of the Monkey Man

“If it is not right do not do it;
if it is not true do not say it.”

-Marcus Aurelius,
Meditations

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I am grateful for and awed by my sister and friend, Carrie Villa, for her capacity to love and give of herself and for her perpetual strength, support, and commitment to our relationship. My mother, Caroline Villa, deserves a multitude of thanks for believing in me, loving me, and encouraging me, always. I am profoundly grateful for my friend, Philip Cyscon, for the many ways he loved and supported me throughout this process and for the countless hours we spent together though separated by many miles. I am beholden to my friends, Jonathan and Valerie Foman, for their love and endless generosity. Without them, it would not have been possible for me to travel home as often as I did. I am utterly grateful for and humbled by the gifts of genuine kindness and love that I have received from my dear friends, Tara and Tommy Elkins.

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LIST OF ABBREVIATIONS

1/2/3	1 st /2 nd /3 rd person (Hittite)
1 st /2 nd /3 rd	1 st /2 nd /3 rd person (Swahili)
ABL	ablative
ACC	accusative
ADV	adverbial
AGT	agentive
APPL	applicative
CAUS	causative
CL 1, 2, 3...	noun class
CONJ	conjunction
CONN	connective
DAT	dative
DIR	directive
FOC	focus
GEN	genitive
IMPF	imperfective
IND	indicative
INF	infinitive
INCH	inchoative
INST	instrumental
INTJ	interjection
INTR	introductory particle
IRR	irrealis

LOC	locative
MED	middle
NEG	negation
NOM	nominative
NT	neuter NOM/ACC
OM	object marker
PASS	passive
PAST	past tense
PERF	perfective
PL	plural
PROG	progressive
PTCPL	participle
QUOT	quotative
REFL	reflexive
SG	singular
SM	subject marker
STAT	stative
SUBJ	subjunctive
TNS	tense
TOP	topic
WH	interrogative or relative

ABSTRACT

Much research on unaccusativity has been done over the past three-and-a-half decades since the formulation of the Unaccusative Hypothesis (Perlmutter 1978). Researchers have examined the semantics of intransitive verbs as well as their syntax to account for the classification of a verb as either unaccusative or unergative; however, for the most part, a similar conclusion across researchers has been reached that neither the semantics of the verb nor the syntactic structure is sufficient by itself to satisfy certain diagnostics of unaccusativity (Legendre and Sorace 2003). Levin and Rappaport Hovav (1995) argue that the syntactic classification of all verbs is semantically determined; therefore, the unaccusativity or unergativity of a verb is syntactically encoded but semantically determined (Levin and Rappaport Hovav 1989, 1995; Legendre et al. 1990, 1991). However, this does not reveal which semantic properties of intransitive verbs in a given language or across languages determine its syntactic classification.

Optimality Theory (Prince and Smolensky 1991, 1993; McCarthy and Prince 1993) is a theory of how constraints interact with one another. The theory does not commit a researcher to using a particular approach to syntactic or phonological structure, but provides a framework for applying constraints and evaluating structural representations (McCarthy 2011). The current dissertation uses an optimality-theoretical approach to split-intransitivity (i.e., unaccusativity) in Swahili and Hittite to demonstrate how variation across languages arises from the distinct constraint ranking that characterizes each language. Additionally, this research suggests the use of a partial constraint ranking (i.e., floating constraint) to account for variable behavior verbs within and across languages.

Findings from this dissertation indicate that there are principles that predict the unaccusativity or unergativity for a particular class of intransitive verbs and that there is another

class of intransitive verbs whose unaccusativity or unergativity varies across languages. This conclusion supports the moderate form of Perlmutter's (1978) Unaccusative Hypothesis.

CHAPTER 1: THE UNACCUSATIVE HYPOTHESIS

1.1 Introduction

Research in the area of the Unaccusative Hypothesis (Perlmutter 1978) involves many linguistic fields including syntax, semantics, morphology, and their interfaces (Perlmutter 1978, 1989; Rosen 1981; Levin and Rappaport Hovav 1991, 1995; Zaenen 1993; Kishimoto 1996; among others). The proposal of the Unaccusative Hypothesis inspired much research of unaccusativity, also referred to as split-intransitivity, in a variety of languages as well as discussion about whether an intransitive verb's unaccusativity or unergativity is ascertainable solely from the semantics of the verb (Perlmutter 1978; Harris 1982; Perlmutter and Postal 1983, 1984; Rosen 1984; among others).

The purpose of the current dissertation research is to examine the realization of unaccusativity in Swahili using Optimality Theory as a theoretical framework. According to McCarthy (2008), it has been possible to use the applications of Optimality Theory in other fields of linguistics to account for different linguistic phenomena (Russell 1995, 1997; Hammond, 1997; Pesetsky 1997; Speas 1997, Legendre & Sorace 2003; among others). Optimality Theory is well suited for the current dissertation because it provides a framework for applying constraints and evaluating structural representations without committing the researcher to a particular approach to linguistic theory, such as phrase structure or syllable structure.

The central problem of split-intransitivity is that there is a relatively small number of properties that split the set of intransitive verbs into two subsets, but the properties do not all split them into the same two subsets. This is a problem since there are phenomena, such as choice between auxiliary *have* and *be* in some languages (as discussed in section 2.3 below), that require that a single split be determined. Therefore, the researcher must work out for each language which property or properties to prioritize in making that split. For example, telicity, change of state, and agentivity are typical properties of intransitive verbs that split the set into two subsets. An intransitive verb can be either telic (i.e., bounded) or atelic (i.e., unbounded). The lone argument of the verb may or may not experience a change

of state and may exhibit either agent- or patient-like properties. Although there is a tendency for unaccusative verbs to be telic and exhibit patient-like properties, and for their lone arguments to experience a change of state, it is only a tendency, not a rule.

Crosslinguistic research provides evidence that split-intransitivity is a part of Universal Grammar, which is the idea that much of the grammar of any language is common to all languages. Nevertheless, unaccusativity remains an interesting puzzle at the theoretical level because there is no parsimonious explanation for predicting an intransitive verb's unaccusativity or unergativity across languages. Moreover, much research has been done on English and other languages (Perlmutter 1978, Burzio 1986, Legendre 1989, Marantz 1992, Zaenen 1993, B. Levin and Rappaport 1995, Kishimoto 1996, among others); however, investigation into the split-intransitivity of verbs in Swahili is all but non-existent. The void in this area of research is such that researchers such as Seidl and Dimitriadis (2003), Mchombo (1993), and others make claims regarding the behavior of Swahili intransitive verbs which they refer to as either unaccusative- or unergative-type without data to support the claim that those particular verbs exhibit the properties of either categorization. After searching for research to support such claims, I conclude that theoretically-driven research of unaccusativity does not exist for Swahili.

Given this, the primary goal of my dissertation is to use the theoretical framework of Optimality Theory to examine split-intransitivity in Swahili. By doing this, I add to the Swahili language data as well as contribute to the study of split-intransitivity, a phenomenon that is thought to exist across all languages. To do this I examine the syntactic, semantic, and morphological behavior of Swahili intransitive verbs in order to fully delineate the set of verbs that pattern as unaccusative- or unergative-type verbs in the language. This research presents the results of the seminal research in the area of unaccusativity in Swahili. Another component of this dissertation involves the study of unaccusativity in Hittite (Garrett 1996) because Hittite provides the opportunity to demonstrate that split-intransitivity is not a recent language development (Hittite is attested from c. 1570-1200 BC.) and to show some of the similarities and differences in the realization of unaccusativity within the same language family. Data

presented here come from Hittite, Dutch, English, Italian, and French, which are all languages of the Indo-European language family. Swahili is not a member of the Indo-European family, but a member of the Bantu language family. Together the Hittite and Swahili data provide some evidence for the similarities and differences in the realization of split-intransitivity across two language families, which in turn provide further evidence for the universal nature of unaccusativity.

Although much information regarding unaccusativity in Swahili is laid out in this research, it is not nearly enough to meet the goal of fully delineating the set of Swahili intransitive verbs into unaccusative or unergative verbs. Therefore, the focus of this dissertation research is on the potential for using Optimality Theory as a framework for split-intransitivity in Swahili and perhaps, other unexplored languages.

My methods included a rigorous literature review of the Unaccusative Hypothesis, Government and Binding Theory, Relational Grammar, Optimality Theory, unaccusativity in English, Italian, French, *inter alia*; and Universal Grammar. In addition, I also explored split-intransitivity in Hittite because it is one of the oldest languages in the family of Indo-European languages, and the existence of split-intransitivity in Hittite brings the universal nature of unaccusativity into focus. My study of Swahili included both a study of grammatical descriptions of Swahili and hours of interviews with Dr. Deogratias Tungaraza whose native speaker intuitions about Swahili verified the grammaticality, or lack thereof, of the language data.¹

In the remaining sections of this chapter, I define the unaccusative hypothesis and examine some of the research over the past thirty-five years in split-intransitivity that has illuminated the complexity of its realization in specific languages and across languages. Perlmutter's hypothesis and seminal research is presented in section 1.2 and 1.3, followed in section 1.4 by some research that offers evidence against Perlmutter's suggestion that semantically synonymous intransitive verbs pattern the same across languages in terms of their categorization as either unaccusative- or unergative-type verbs.

¹ This study was exempted by Dr. Robert C. Mathews, Chairman of the Institutional Review Board, Louisiana State University: IRB# E8457.

Some features of Indo-European languages have been helpful in delineating the two types of intransitive verbs and have come to be called diagnostics of unaccusativity. Some diagnostics of unaccusativity are presented in section 1.5 while examining unaccusativity in English, Italian, and Hittite. For the purposes of further discussion in Chapter 4, a more expansive examination of unaccusativity in Hittite is presented. The final section looks at variable behavior verbs and verbs with multiple meanings.

Chapter 2 introduces Optimality Theory and examines a study of French and Italian auxiliary selection (i.e., a diagnostic of unaccusativity) from an optimality-theoretical perspective (Legendre and Sorace 2003).

Chapter 3 presents the current research in unaccusativity in Swahili. Chapter 4 presents an optimality-theoretical perspective of unaccusativity in both Swahili and Hittite. Chapter 5 discusses some of the possible problems with approaching split-intransitivity from an optimality-theoretical perspective, as well as discussing the floating constraint (i.e., partial constraint ranking) and proposing a possible substitute for the *2 constraint (Both the floating constraint and the *2 constraint are reviewed in the work of Legendre and Sorace [2003] in Chapter 2).

1.2 The Unaccusative Hypothesis

The Unaccusative Hypothesis (Perlmutter 1978) is a syntactic hypothesis that posits the existence of two categories of intransitive verbs: *unergative* verbs—intransitive verbs whose lone argument exhibits typical subject-like characteristics; and *unaccusative* verbs—intransitive verbs whose lone argument exhibits typical object-like characteristics. This can be illustrated in Relational Grammar or Government and Binding Theory. Although Perlmutter introduces the Unaccusative Hypothesis within the framework of Relational Grammar, except where necessary, the research presented here is discussed within the framework of Government and Binding Theory (Chomsky 1981).

1.2.1 Government and Binding Theory

Government and Binding Theory (GB) assumes that much of the grammar of any given language is common to all languages, therefore, making it part of Universal Grammar. According to GB,

Universal Grammar consists of two main components: levels of representation and a system of rules and constraints. Figure 1.1 depicts a derivational model with the four levels of representation: the Lexicon, Deep-Structure (D-Structure), Surface-Structure (S-Structure), and Phonological and Logical Form (PF and LF respectively). The lexicon lists all of the lexical items and their properties. Lexical items are combined in the underlying or D-Structure. The D-Structure maps onto the S-Surface structure by way of a movement rule called *move-alpha* (move- α), which permits movement of any category to a different position except when the system of constraints restricts such movement. This means that if any movement is to take place, it is rule-governed and it takes place in the mapping of the D-Structure onto the S-Structure. As shown in Figure 1.1, a similar movement rule *LF move-alpha* maps the S-Structure onto the LF. Phonological rules take place at PF. The S-Structure is the level of syntactic representation that closely mirrors the order of the sentence. According to the GB architecture, S-Structure is not interpreted directly, but is factored into PF (i.e., the interface with phonology) and LF (i.e., the interface with semantics).

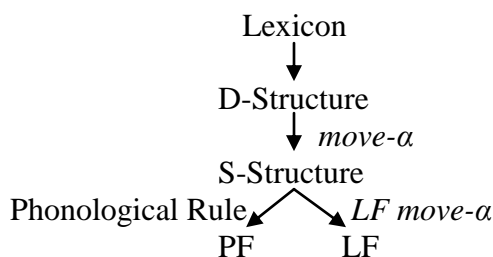


Figure 1.1: Levels of Representation

The next section discusses the unaccusative hypothesis in the framework of GB. Although all four levels of representation were introduced in this section, the following discussion involves only the D-Structure and S-Structure levels.

1.2.2 The Unaccusative Hypothesis and Government and Binding Theory

In the terms of GB, unaccusative intransitive verbs and unergative intransitive verbs exhibit different underlying syntactic structures. In the D-Structure, unergative verbs take a subject and no object, whereas unaccusative verbs take an object and no subject (Burzio 1986). In English, for example, the intransitive verb *swim* is unergative and has the underlying structure NP [_{VP} V], while the intransitive

verbs *slip* and *fall* are unaccusative and have the underlying structure ___ [_{VP} V NP]. Examples (1-3) below demonstrate that the S-Structure of these examples, using the verbs *swim*, *slip*, and *fall*, are indistinguishable.

(1) The visitors swam.

(2) The visitors slipped.

(3) The visitors fell.

As mentioned at the beginning of this subsection, the lone argument of unergative verbs tends to exhibit subject-like properties, whereas that of unaccusative verbs tends to exhibit object-like properties. At this point, it is important to make clear this information. What semantic descriptors come to mind when one thinks of subject-like properties? Do these same descriptors apply to the subject in each of the sentences in examples (1-3)? If not, how do they differ? Each question is considered in turn in the following discussion.

What semantic descriptors come to mind when one thinks of subject-like properties?

One may describe a subject as an agent or doer of the action, as well as one who initiates and controls the action of a particular verb.

Do these same descriptors apply to the subject in each of the sentences in examples (1-3)? If not, how do they differ?

In example (1), *the visitors* are indeed doers of the action of swimming. The act of swimming is usually one that is volitional in nature and controlled by the swimmer. In examples (2-3), it can be said that *the visitors* are doers of the actions of slipping and falling, respectively; however, it seems that these visitors are not doers in the same way that the swimming visitors are doers of the action. The slipping and falling visitors participate in these actions but they do not initiate them. These actions seem to happen to the subject instead of being initiated by the subject. In other words, *the visitors* of examples (2-3) probably did not choose to slip or fall and they are certainly not in control of these particular actions. These particular characteristics (i.e., the ones of the lone argument of an unaccusative verb) are considered object-like or patient-like.

As shown in the phrase structure trees in Figures 1.2-1.3 below, the D-Structure (Figure 1.2) and the S-Structure (Figure 1.3) of example (1) are unvarying. This is due to the fact that no movement is necessary in the D-Structure to arrive at the surface form. However, this is not so for the unaccusative verbs *slip* and *fall*. In the D-Structure of examples (2-3), the lone argument, *the visitors*, originates post-verbally in the direct object position. The movement of the object from its original post-verbal position in the D-Structure into the empty subject position obscures the difference at S-Structure between the D-Structure of the unaccusative intransitive verbs and that of the unergative intransitive verb.

Notice in Figure 1.3 that when the determiner phrase (DP_i) moves from the D-Structure direct object position to the S-Structure subject position, a trace of the constituent is left in its place, which is indicated by the lowercase *t*. The trace in a syntax tree not only shows where the moved constituent came from, but also prevents movement of another constituent to that previously occupied location.

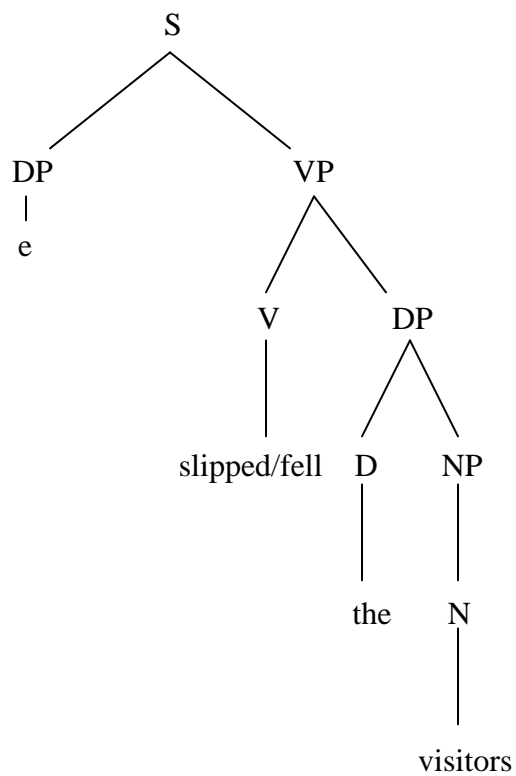
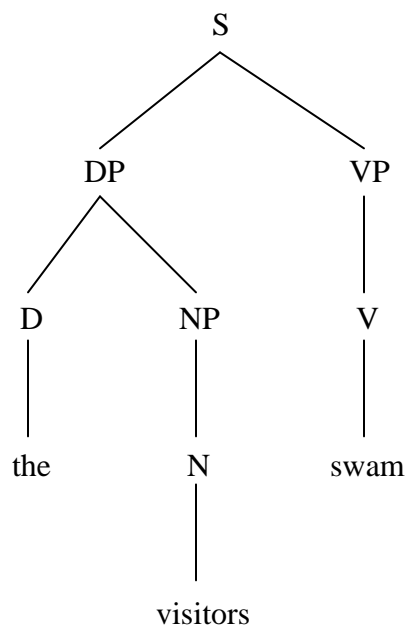


Figure 1.2: D-Structure of Examples (1-3)

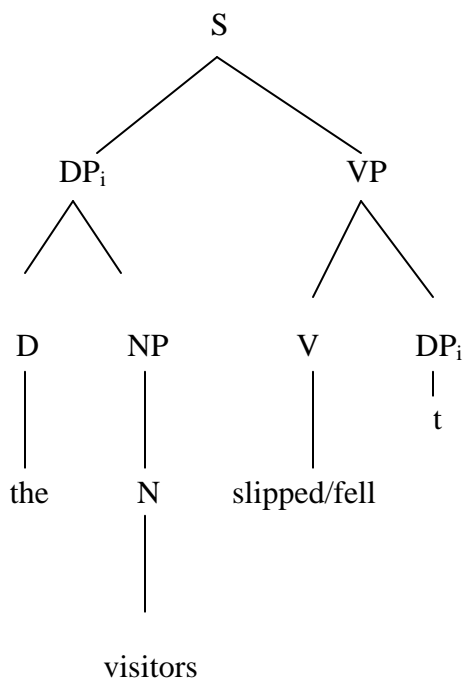
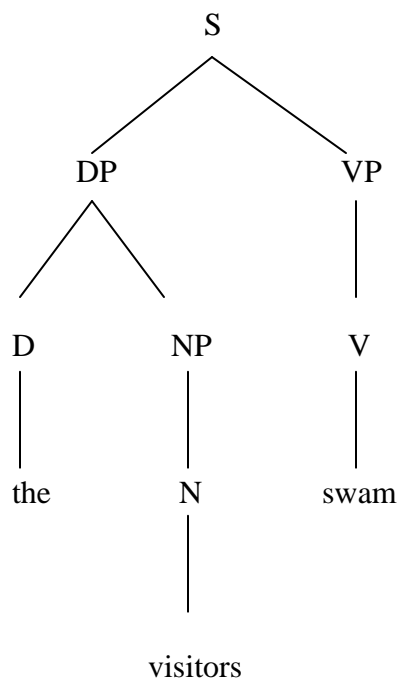


Figure 1.3: S-Structure of Examples (1-3)

1.2.3 Perlmutter and the Unaccusative Hypothesis

Perlmutter (1978) distinguishes three forms of the Unaccusative Hypothesis:

- (4a) Because unaccusativity and unergativity vary from one language to another, there is no way to predict the classification of an intransitive verb as unaccusative or unergative.
- (4b) There are principles that predict the unaccusativity or unergativity for a particular class of intransitive verbs; however, there is another class of intransitive verbs whose unaccusativity or unergativity varies across languages.
- (4c) Unaccusativity and unergativity cannot vary cross-linguistically because there are universal principles that predict the unaccusativity or unergativity for all intransitive verbs in all languages.

Clearly, (4c) is the strongest form of the Unaccusative Hypothesis (henceforth UH) and as such Perlmutter (1978) suggests that it be thoroughly tested in other languages. With various forms proposed for the UH ranging from weak (4a) to strong (4c), one must ask to what extent the unaccusativity or unergativity of an intransitive verb is homogeneous and/or heterogeneous across languages. While Perlmutter does not specify the principles that would predict an intransitive verb's classification as unaccusative or unergative, he does propose that it can be predicted from the semantics of the verb. Perlmutter proposes one approach to delineating the class of intransitive verbs into either unaccusative- or unergative-type predicates would be to distinguish the set of meanings that determine the unergativity of an intransitive verb, then any intransitive verb whose meaning falls outside of that particular set would be unaccusative.

The Universal Alignment Hypothesis (Perlmutter and Postal 1984) suggests that one can infer from the semantics of an intransitive verb whether the sole argument of the verb is an underlying object or an underlying subject. Taken from Perlmutter (1978, 162-163) and Perlmutter and Postal (1984, 98-99), the following lists of English verbs demonstrate the semantic similarities within the two categories

of intransitive verbs.² While the following examples are English intransitive verbs, it is argued that semantically similar verbs in other languages will pattern comparably (Perlmutter 1978; Perlmutter and Postal 1984).

English Unergative Verbs

Verbs describing willed or volitional acts:

work, play, speak, talk, smile, grin, frown, grimace, think, meditate, cogitate, daydream, skate, ski, swim, hunt, bicycle, walk, skip (voluntary), jog, quarrel, fight, wrestle, box, agree, disagree, knock, bang, hammer, pray, weep, cry, kneel, bow, curtsy, genuflect, cheat, lie (tell a falsehood), study, whistle (voluntary), laugh, dance, crawl, etc.

This category includes ‘manner-of-speaking verbs’ such as whisper, shout, mumble, grumble, growl, bellow, etc., as well as predicates describing sounds made by animals such as bark, neigh, whinny, quack, roar (voluntary), chirp, oink, meow, etc.

Certain involuntary bodily processes:

cough, sneeze, hiccough, belch, burp, vomit, defecate, urinate, sleep, breathe, etc.

English Unaccusative Verbs

Verbs expressed by adjectives in English:

This is a very large class, including predicates describing sizes, shapes, weights, colors, smells, states of mind, etc.

Verbs whose sole argument is semantically a Patient:

burn, fall, drop, sink, float, slide, slip, glide, soar, flow, ooze, seep, trickle, drip, gush, hang, dangle, sway, wave, tremble, shake, languish, flourish, thrive, drown, stumble, trip, roll

²For organizational purposes, these lists have been altered from their appearance in Perlmutter (1978) and Perlmutter and Postal (1984). That is to say that multiple appearances of a verb in a single category were removed, some titles of the categories were changed in order to clarify some of the terminology, and if a verb was listed in more than one category, it remained solely in the category where it seemed to be a better fit. However, no further restructuring of the lists were done because their presentation here is intended to show the beginnings of the Unaccusative Hypothesis. In addition, further research (See Levin and Rappaport 1995.) has shown that some of these verbs do not belong in the categories where they were placed in Perlmutter’s seminal work.

(involuntary), succumb, dry, blow away, boil, seethe, lie (involuntary), sit (involuntary), bend (involuntary), etc.

This category also includes the class of ‘inchoatives’ such as melt, freeze, evaporate, vaporize, solidify, crystallize, dim, brighten, redden, darken, yellow, rot, decompose, germinate, sprout, bud, wilt, wither, increase, decrease, reduce, grow, collapse, dissolve, disintegrate, die, perish, choke, suffocate, blush, open, close, break, shatter, crumble, crack, split, burst, explode, burn up, burn down, dry up, dry out, scatter, disperse, fill, etc.³

Verbs of existing and happening:

exist, happen, transpire, occur, take place, etc.

This category includes various inchoatives such as arise, ensue, result, show up, end up, turn up, pop up, vanish, disappear, etc.

Involuntary emission of stimuli that impinge on the senses:⁴

shine, sparkle, glitter, glisten, glow, jingle, clink, clang, snap (involuntary), crackle, pop, smell, stink, etc.

Aspectual verbs:

begin, start, stop, cease, continue, end, etc.

Duratives:

last, remain, stay, survive, etc.

According to Perlmutter (1978), the class of unergative intransitive verbs corresponds to the traditional notion of *active* or *activity*, which refers to the aspectual properties of the verb. In other words, unergative intransitive verbs denote activities and unaccusative intransitive verbs denote states or events. It is also worth noting that most of the unergative verbs in the list are intransitive verbs whose sole arguments tend to exhibit more agent-like properties, whereas those of the ones labeled as

³ The term ‘inchoative’ refers to verbs that denote a process of beginning or becoming.

⁴ According to Levin and Rappaport (1995), verbs of involuntary emission of stimuli that impinge on the senses are unergative predicates, not unaccusative ones.

unaccusative verbs tend to exhibit more patient-like properties. Agents display features of control or volition regarding the action of the verb, whereas patients tend to undergo processes or be subjected to or targeted by the action of the verb.

1.3 The 1-Advancement Exclusiveness Law

The main objective of the paper where Perlmutter introduces the Unaccusative Hypothesis (1978) in Relational Grammar is to argue in favor of the advancement analysis of impersonal Passives that opposes the assertion of Keenan (1974), Comrie (1977), and Jain (1977) that impersonal Passives be characterized as a demotion analysis.⁵

According to Perlmutter and Postal (1984), all languages that allow impersonal Passives have a dummy that moves from object position to subject position, which is similar to the object to subject position movement of a personal Passive. As can be seen below, in the Dutch example (5), *de kaas* ‘the cheese’ moves into subject position in the personal Passive; however, in example (6) *er wordt door* (the dummy) moves to subject position in the impersonal Passive. Compare the following Dutch examples taken from Perlmutter (1978, 157 and 159):

(5) *De kaas werd door de kinderen gegeten.*

‘The cheese was eaten by the children.’

(6) *Er wordt door de kinderen op het ijs geschaatst.*

‘It is skated by the children on the ice.’

⁵ In the formation of Passives, personal Passives are formed from transitive verbs and impersonal Passives are formed from intransitive verbs. In languages that permit the impersonal Passive construction, two types of impersonal Passives have been identified: those that have a pronounced or surface dummy nominal in subject position and those that do not have one. Both types exist in German as the following examples demonstrate:

Es wurde hier getanzt

‘It was danced here’

“There was dancing here.”

Hier wurde getanzt

‘Here was danced’

“Here (there) was dancing.”

Perlmutter (1978) suggests that the UH and the 1-Advancement Exclusiveness Law (Perlmutter and Postal 1984) provide support for adopting an advancement analysis. The 1-Advancement Exclusiveness (1-AEX) Law states that there can be only one movement to subject position in a single clause. According to Perlmutter and Postal, if it is true that impersonal Passives involve the movement of a dummy object to subject position and all unaccusative clauses involve the movement of an underlying object to subject position, then impersonal Passives created from unaccusative clauses would involve two movements to subject position, which would violate the 1-AEX Law. Therefore, the 1-AEX Law predicts that such impersonal Passives will be ill-formed in any language. The following examples from Dutch cited in Perlmutter (1978, 169-170) provide support for this claim. Examples (7-8) are clauses with unergative verbs and well-formed impersonal Passives, whereas examples (8a-9b) give examples of well-formed clauses with unaccusative verbs contrasted with their ungrammatical impersonal Passive counterpart.

(7) *Er wordt door de kinderen in de tuin heen en weer gerend.*

‘It is run back and forth in the garden by the children.’

(8) *Er wordt door hem altijd gedubd.*

‘It is always thought deeply by him.’

(9) a. *De kinderen bungelden aan de kabel.*

‘The children dangled from the cable.’

b. **Er werd door de kinderen aan de kabel gebungeld.*

(10) a. *De bloemen waren binnen een paar dagen verflenst.*

‘The flowers had wilted in a few days.’

b. **Er werd door de bloemen binnen een paar dagen verflenst.*

The idea here is that when the dummy object moves into subject position in examples (7-8) the lone argument of the verb moves out of subject position and into an oblique phrase. In the case of examples (9a) and (10a), the lone argument of the verb (an underlying object) has already moved to

subject position. This means that the dummy cannot move into subject position because it is already occupied. This second movement to subject position is in violation of the 1-AEX Law.

Nevertheless, the grammaticality of the English examples (11-14) provide evidence that contradicts Perlmutter's suggestion that unaccusative clauses necessarily involve the movement of the underlying object into subject position and that unaccusative clauses whose lone argument remains in object position at S-Structure will not be well formed in any language. In other words, examples (11-14) demonstrate that it is possible in English to have well formed unaccusative clauses without the underlying object moving because the subject position is already filled with the syntactic expletive *there*.

(11) In the evening, there arrived some travelers from the west.

(12) "[...] and there fell a shadow upon my soul [...]"⁶ (Poe, 1840)

(13) "And there appeared before them, Elijah and Moses talking with Jesus" (Mark 9:4 [NIV]).

(14) *There Fell a Shadow*⁷ (Klavan, 2011)

Furthermore, the 1-AEX does not clearly explain the lack of unaccusative intransitive verbs with impersonal passives and the so-called advantage of an advancement analysis over a demotion analysis is opaque as well. A demotion analysis would suggest that impersonal passives with an unergative structure demote an underlying subject, whereas an unaccusative structure has no underlying subject to demote, Q.E.D.

1.4 Crosslinguistic Research of the Unaccusative Hypothesis

The crosslinguistic research of the UH has demonstrated that semantically similar verbs vary regarding their categorization as unaccusative or unergative. Evidence of this was first presented with examples from Georgian (Harris 1982) and followed with examples from Italian, Dutch, Choctaw, Lakota, inter alia (Rosen 1984). These researchers acknowledge that although there is a tendency for

⁶ Edgar Allan Poe, "The Fall of the House of Usher." In *Tales of the Grotesque and Arabesque*. (Philadelphia: Lea & Blanchard, 1840).

⁷ Andrew Klavan, *There Fell a Shadow: A John Wells Mystery*. (MysteriousPress.com/Open Road, 2011). e-book.

unaccusativity and unergativity to be associated with particular meanings, there is no one to one relationship between a verb's unergativity or its unaccusativity and its meaning across languages; therefore, unaccusativity cannot be based solely on the similarity of meanings of the verbs as predicted by Perlmutter (1978). Clearly, differences in the unaccusative or unergative categorization of semantically similar verbs lend support in favor of a weaker form of the Unaccusative Hypothesis. The verbs listed in Table 1.1 are semantically similar across languages yet different in terms of their categorization as unaccusative or unergative. Hittite and Swahili have been added to the examples cited in Rosen (1984, 66-67).

Although it is true that semantically similar verbs do not necessarily pattern comparably crosslinguistically, this does not rule out the importance of semantic similarities. Evidence shows that different languages indicate the split of their set of intransitive verbs into unaccusative or unergative verbs using different semantic factors. For example, in Japanese, the split is dependent upon volitionality (i.e., control) (Kishimoto 1996), whereas in Hittite, the split is dependent upon whether or not there is a change of location or state (Garrett 1996).

Another semantic property that marks a split in the set of intransitive verbs in a given language is telicity (i.e., delimitedness). Van Valin (1990) contends that agency and telicity are strong determinants in delineating unaccusative and unergative verbs.

Table 1.1: Categorizations for Semantically Similar Verbs Across Languages

	UNACCUSATIVE	UNERGATIVE
run	Hittite, Italian	Swahili, English, Italian ⁸
come	Hittite, Italian	Turkish, Choctaw
arrive	Swahili, English, Italian	Albanian, Turkish
go	Hittite, Italian	Choctaw
bleed	Turkish	Italian

1.5 Unaccusativity across Languages

This section examines some of the ways that split-intransitivity is realized in different languages. Although split-intransitivity in English and Italian will be discussed, the focus of this section is the realization of split-intransitivity in Hittite.

1.5.1 Unaccusativity in English

One of the diagnostics of unaccusativity in English is the resultative construction. According to Simpson (1983a), in a resultative construction, the resultative adjective must be predicated of a D-Structure object. In English, resultative adjectives are resultative on the object of a transitive sentence. In examples (15-16) below, notice the difference in the meaning of each sentence. In example (15), the adjective *clean* describes the table as a result of the waiter's act of wiping the table. However, in example (16), the adjective *tired* does not describe the table as a result of the waiter's act of wiping it. Even if one were to say that *tired* describes the waiter in example (16), which might be true, the resultative meaning *the waiter became tired as a result of wiping the table* is not accessible to a native speaker from that particular sentence. In example (15), a native speaker understands that the table became clean as a result of a process. In example (16), the only meaning that might be accessible to a native speaker is that the waiter was tired, in general. Example (17), the passive voice counterpart to

⁸ According to Rosen (1984), motion verbs tend to introduce some issues due to the fact that some express directionality, result, or manner of motion. These differences can affect the syntax of the verb. For example, the verb *correre* 'run' in Italian is unergative when denoting an activity and unaccusative when the clause expresses the path traversed.

example (15), demonstrates that resultativity can be seen on the (active voice) object that moves into subject position in the passive construction. That is to say that the adjective can be interpreted as resultative with respect to an object, not a subject, because if resultativity is computed at D-Structure, the subject of (17) is a D-Structure object, or, if resultativity is computed at the S-Structure, traces of the moved object left in the object position are sufficient for a resultative interpretation.

(15) The waiter wiped the table *clean*.

(16) *The waiter wiped the table *tired*.

(17) The table was wiped *clean* (by the waiter).

If the lone argument of an unaccusative verb is really a D-Structure object as shown above in Figures 1.2-1.3 and resultative adjectives are resultative on an object, then resultative adjectives should exhibit resultativity on the subject of an unaccusative clause (i.e., an underlying object), as shown in examples (18-20), but not on the subject of a clause with an unergative intransitive verb, as shown in examples (21-22).

(18) The egg broke *open*.

(19) The door swung *closed*.

(20) The puddle froze *solid*.

(21) *The children screamed *hoarse*.

(22) *The triathlete swam *sick*.

Additional evidence for the use of a resultative adjective or phrase on the object and not on the subject is provided by the addition of a *fake reflexive* (Simpson 1983a), which results in the grammaticality of the formerly ungrammatical examples (21-22). Consider examples (23-24):

(23) The children screamed *themselves* hoarse.

(24) The triathlete swam *herself* sick.

Another diagnostic in English is the *X's way*-construction, first discussed in the literature by Marantz (1992), which is actually a diagnostic of unergativity because the construction cannot be used with unaccusative verbs. The construction is a noun phrase (NP) of the form *X's way* found in object

position after an unergative-type intransitive verb. This NP is obligatorily bound to its subject; therefore, its use in a clause with a direct object is unacceptable. The following examples (25-28) show the *X*'s way-construction with both unergative and unaccusative verbs. Examples (29-30) demonstrate the unacceptable use of the construction in a clause with a direct object.

(25) Carrie laughed *her way* out of the staff meeting.

(26) Phil worked *his way* around the room.

(27) *The cat fell *her way* into the box.

(28) *Caroline arrived *her way* to the front door.

(29) a. Jonathan shot *his way* across the firing range.

b. *Jonathan shot bullets *his way* across the firing range.

(30) a. Beau ate *his way* around the buffet table.

b. *Beau ate cake *his way* around the buffet table.

1.5.2 Split-Intransitivity in Italian

According to Rosen (1984) and Burzio (1986), a reliable diagnostic of unaccusativity in Italian is *auxiliary selection*. In Italian, unergative verbs tend to select *avere* 'have', whereas unaccusative verbs tend to select *essere* 'be'. Consider the following examples from Rosen (1984, 69):

(31) a. *Mario ha improvvisato.*

'Mario improvised.'

b. *La notizia è trapelata.*

'The news leaked out.'

Additionally, unaccusatives and unergatives are differentiated based on their behavior with the partitive clitic *ne* 'of them' (Belletti and Rizzi 1981; Burzio 1986). The *ne* clitic is associated with the direct object even though it cliticizes to the verb in pre-verbal position.

(32) a. *Gianni conosce tre racconti del nonno.*

'Gianni knows three stories of Grandpa.'

b. *Gianni ne conosce tre.*

‘Gianni of-them knows three.’

Ne-cliticization is permitted with unaccusative verbs as long as the lone argument of the verb is in post-verbal position. Postverbal subjects in Italian are not in object position as evidenced by their case and they are typically analyzed as being right-adjoined to their verb phrase.

(33) a. *Arriveranno molti studenti.*

‘will-arrive many students.’

b. *Ne arriveranno molti.*

‘of-them will-arrive many.’

c. **Molti ne arriveranno.*

‘many of-them will-arrive.’

Ne-cliticization is ungrammatical with unergative verbs regardless of the subject position.

(34) a. *Telefoneranno molti studenti.*

‘will-telephone many students’

b. *Molti studenti telefoneranno.*

‘many students will-telephone’

c. **Ne telefoneranno molti.*

‘of-them will-telephone many.’

d. **Molti ne telefoneranno.*

‘many of-them will-telephone.’

1.5.3 Split-Intransitivity in Hittite

1.5.3.1 Hittite

Hittite is a member of the Anatolian branch of Indo-European languages. The Anatolian languages were spoken in the Asian part of Turkey and in parts of northern Syria. Hittite is attested from c. 1570-1200 BC. The extensive linguistic remains of the Hittites are comprised of thousands of

cuneiform tablets and tablet fragments, all of which are made of clay except for one bronze tablet (Garrett 1996, Fortson 2004).

The “Anittas text” is the oldest Hittite document, and dates from the sixteenth century BC or earlier. No texts were produced after approximately 1200 BC when Hattusas, the center of the Hittite scribal chancelleries, was destroyed (Fortson 2004).

1.5.3.2 Hittite Subject Clitics

The following are two known factors that condition the distribution of subject clitics in Hittite:

- A. There are only third person subject clitics; therefore, first and second person subjects are omitted when unemphatic.
- B. Clitic subjects do not appear in sentences with S-Structure direct objects (Watkins 1968-69; Garrett 1990, 1996).

In examining the use of intransitive verbs in Hittite with unemphatic third person subjects, one finds that some intransitive verbs regularly occur with subject clitics, while others never occur with subject clitics (Garrett 1996).⁹

It is important now to define Wackernagel’s Law before entering into the next part of the discussion. According to Fortson (2004), Wackernagel’s Law applies to older Indo-European languages. It is the tendency of unstressed clitic particles to appear in second position after the first stressed element in their clause. Sometimes these clitics appear as the third or fourth word in the clause. Research by Hale (1987a, b) shows that Wackernagel’s Law actually involves several processes that usually work together in order to place unstressed particles in second position in the clause. Hale’s research distinguishes three types of postpositive clitics: word-level clitics, which have scope over a single word or constituent, sentence-connective clitics, which conjoin or disjoin clausal constituents, and, of particular importance to this research, sentential clitics, which have scope over an entire clause or sentence. Hittite sentential clitics include the unstressed personal pronouns in Figure 1.4 as well as reflexive *za*, quotative *wa(r)*,

⁹ All of the Hittite language examples are taken from Garrett (1996, 89-104). Any errors in their representation are strictly mine.

irrealis *man*, and the adverbial clitics *an*, *kan*, *šan*, *(a)šta*, and *(a)pa*, which serve expressive functions, which are not yet fully understood, and thus they are often untranslatable into English (Garrett 1996, Fortson 2004).

		Nominative	Accusative	Dative
1sg.			mu	mu
2sg.			ta, ddu	ta, ddu
3sg.	common-gender	aš	an	ši
3sg.	neuter	at (nominative-accusative)		ši
1pl.			naš	naš
2pl.			šmaš	šmaš
3pl.	common-gender	e, at	uš, aš	šmaš
3pl.	neuter	e, at (nominative-accusative)		šmaš

Figure 1.4: Hittite Clitic Pronouns

As a preliminary way of discussing Hittite split-intransitivity, Garrett (1996) describes Hittite pronominal clitic distribution as follows:

Wackernagel's Law in Hittite targets direct objects, certain oblique elements, and unaccusative subjects, but not unergative or transitive subjects. (Garrett 1996, 102)

Perhaps this argument would be stronger if a case could be made for the reanalysis of pronominal subject clitics as a special sort of D-Structure object clitic? This reanalysis would clearly connect the idea that the subject of unaccusative verbs is really an underlying object and Garrett's preliminary way of discussing Hittite split-intransitivity could be restated as follows:

Wackernagel's Law in Hittite targets S-Structure direct objects, certain oblique elements, and unaccusative subjects (i.e., D-Structure objects), but not unergative or transitive subjects.

As stated above, clitic subjects do not appear with S-Structure direct objects. According to Garrett (1996), clitic subjects do, however, appear in sentences with unaccusative verbs but never in sentences with unergative verbs. This seems a bit counterintuitive if one accepts the idea that the subject of an unaccusative verb is actually an underlying object, because one would expect clitic subjects to appear not with unaccusative verbs but with unergative verbs.

A reanalysis of the Hittite subject clitic as a special type of object clitic works if the subject clitic can only attach to the lone argument of an unaccusative verb as it moves from the D-Structure object position into the empty subject position at the S-Structure. If the Hittite subject clitic attached to any object at the D-Structure, then one would expect Hittite subject clitics to appear with superficial direct objects and with the subject of a Passive construction, but this is not the case. Clearly, there is a difference between what happens during the movement of the lone argument of a Hittite unaccusative verb and what happens during the movement of the direct object of a transitive verb in a Passive construction.

1.5.3.3 Hittite Intransitive Verbs and Subject Clitics

Hittite unaccusative verbs are the intransitive verbs that regularly appear with 3rd person subject clitics even when the subject is unemphatic. The list of unaccusative verb types is as follows:

Middle Decausatives:

Middle decausatives are morphologically middle verbs that have transitive counterparts whose objects correspond notionally to the subjects of their intransitive counterparts. Example (35) shows a typical example of a middle decausative with an unemphatic third person subject.¹⁰

¹⁰ For a condensed list of Hittite intransitive verbs attested with subject clitics, see Appendix A. For more complete lists, see Garrett (1996).

- (35) [n]=aš=kan TA ^dU zaḥtari
 INTR=NOM3SG=ADV by the Storm God strike (MED3SG)
 ‘**He** will be struck by the Storm God.’

Middle Reflexives:

Middle reflexives have transitive counterparts that are active. This type of intransitive verb occurs with the reflexive clitic *za*.

- (36) LUGAL MUNUS.LUGAL ŠU.MEŠ-ŠUNU arranzi
 king queen **their hands** wash (3PL)
 ‘The king and queen wash **their hands**.’

- (37) nu=**za** apez arri
 INTR=REFL this (ABL) wash (3SG)
 ‘(He) washes **himself** with this.’

- (38) n=aš=za āršikitta
 INTR=NOM3SG=REFL wash (IMPF.MED3SG)
 ‘**He** washes.’

The verb in examples (36-37) is active. The direct object of the verb in (36) is *ŠU.MEŠ-ŠUNU* ‘their hands’ and in (37), it is the reflexive clitic *za*. Notice there is no subject clitic present in either (36) or (37) because they do not occur with S-Structure direct objects. Example (38) demonstrates the intransitivity of the middle verb *āršikitta* ‘washes’ by the use of the 3rd person singular subject clitic *aš* ‘he’. This intransitivity demonstrates the contrast between the middle reflexive class and the “superficially similar class of transitive (active or middle) verbs with reflexive direct objects (Garrett 1996, 93). In other words, similar to transitive (active or middle) verbs with reflexive direct objects, an

intransitive middle reflexive verb appears with the reflexive clitic *za*; however, it also appears with a subject clitic, which distinguishes it as not only intransitive, but unaccusative.¹¹

Change-of-State Verbs:

Change-of-state verbs contain both active and middle formations.

- (39) [n]=aš INA MU.3.KAM GEME-re[šzi]
 INTR=NOM3SG in three years unfree (INCH3SG)
 ‘In three years **he** will become unfree.’

- (40) nu=war=aš=mu=kan BA.ÚŠ
 INTR=QUOT=NOM3SG=DAT1SG=ADV died
 ‘**He** [my husband] died on me.’

Primarily stative verbs including members of the morphological class of stative verbs in -ē-:

- (41) n=aš=ša[(n ḥaššī PANI ^dU.GUR kitta)]
 INTR=NOM3SG=ADV hearth (DAT) before ^dU.GUR lie (MED3SG)
 ‘**It** lies on the hearth before (the divinity) U.GUR.’

Intransitive Psychological Verbs:

- (42) n=aš naḥta
 INTR=NOM3SG feared (3SG)
 ‘(**He**) was afraid.’

Within this intransitive-verb type, *naḥḥ*- ‘be afraid’ and *šā*- ‘be angry (with)’ also have transitive uses where no subject clitics appear:

- (43) š=an naḥta
 INTR=ACC3SG feared (3SG)
 ‘(He) feared it.’

¹¹ In an email conversation with Craig Melchert on September 4, 2014, he explained that the reflexive clitic *za* does not fill an argument position in example (32), which is why it can appear in a sentence with an intransitive middle reflexive; however, how to capture its function in these cases is still an open question.

- (44) antuḥšann=a=(a)z kuin DINGIR.MEŠ šanzi
 person (ACC)=CONJ=REFL WH.ACC.SG gods be angry (3PL)
 ‘And whatever person the gods are angry with ...’

Direction-of-Motion Verbs:

Intransitive verbs that have an inherently directional component analogous to the English verbs *arrive*, *come*, and *go* are categorized as Direction-of-Motion Verbs.

- (45) Maninkuwann=aš=mu ŪL=pat uit
 near=NOM3SG=DAT1SG NEG=FOC came (3SG)
 ‘**He** did not come near me at all.’

Manner-of-Motion Verbs:

This group consists of two manner-of-motion verbs, *iya*- ‘walk’ and *ḥuwāi*- ‘run’, that denote events controlled by their protagonists. These verbs are comparable to the English verbs *run*, *walk*, and *swim*. Unlike direction-of-motion verbs that tend to be telic, manner-of-motion verbs such as these are atelic.

- (46) LÚ.M^{ES}[ME] ŠEDI DUMU[.É.GAL-T]IM
 guards palace attendants
 3 šārīēš iyanta ... ANA ^{GIŠ}ḥuluganni=ma=at EGIR-pa 1 IKU
 three files (NOM) walk cart (DAT)=TOP=NOM3PL behind one IKU
 iyanta
 walk (MED3PL)

‘The guards and palace attendants walk in three files ... **They** walk one IKU behind the cart.’

Miscellaneous Verbs:

In addition to the aforementioned intransitive verb types, some miscellaneous intransitive verbs regularly occur with clitic subjects. The verb *ḥuntariya*- ‘fart’, used in example (47), is one such verb.

- (47) ŠIPAT ḥuwandaš mān=za ḥāši n=aš
 incantation wind (GEN) when=REFL bear (3SG) INTR=NOM3SG

Ü[L] ħuntariyaitta n=an kišan ħu[kmi]

NEG fart (MED3SG) INTR=ACC3SG as follows enchant (1SG)

‘Incantation of the Wind: When (she) is giving birth and **she** does not break wind, (I) cast a spell on her as follows.’

The intransitive verbs that never attest with subject clitics are unergative verbs. Garrett (1996) classifies these verbs into two main groups: a small group of miscellaneous intransitive verbs and a group of intransitive verbs he calls *detransitives* that have transitive counterparts with subjects that correspond notionally to the subject of their transitive counterparts.¹² Example (48) uses the Hittite verb *lāḫuwa-* ‘pour’ from the miscellaneous group of intransitive verbs and example (49) uses the verbs *wak-* ‘bite’, and *išparre-* ‘kick (flat)’ from the list of detransitives.¹³

(48) [arun]an tarmāmi nu āppa natta lāḫui

sea (ACC) nail (1SG) INTR back NEG pour (3SG)

‘(I) will nail the sea and (it) will not flow back.’

(49) aliyaš=wa ŪL wāi ŪL=ma=wa wāki

deer=QUOT NEG cry (3SG) NEG=TOP=QUOT bite (3SG)

ŪL=ma=wa išparizzi

NEG=TOP=QUOT kick (3SG)

‘The deer does not cry, (it) does not bite, (it) does not kick.’

Remember that in the D-Structure, unergative verbs take a subject and no object, whereas unaccusative verbs take an object and no subject (Burzio 1986). Supporting the idea that unaccusative verbs and unergative verbs exhibit underlying syntactic structures that differ, Garrett discusses decausatives and detransitives. Decausatives have transitive counterparts whose objects correspond

¹² For condensed lists of intransitive verbs never attested with subject clitics, see Appendix B. For more complete lists, see Garrett (1996).

¹³ In example (49) the Hittite verb for “cry” appears in the 3rd person singular form *wāi*. This verb does not appear on any of the lists provided in Garrett (1996). However, two related forms appear in the miscellaneous list of intransitives that never attest with subject clitics: *arkuwāi-* ‘plead’ and *palwāi-* ‘cry out’.

notionally to the (surface) subject of the intransitive verb. Like decausatives, detransitives also have transitive counterparts, yet unlike decausatives, the subject of a detransitive verb corresponds notionally to the subject of its transitive counterpart.

1.5.3.4 The Hittite Verbal Participle

Garrett (1996) also illustrates how the division of Hittite intransitive verbs into unaccusatives and unergatives is supported by the syntax of the verbal participle, which is not marked for active or middle voice and can be used predicatively or attributively, and in a construction Garrett calls the “perfect” (102).

Similar to the realization of unaccusativity in some other Indo-European languages that have been studied (Centineo 1986, Zaenen 1993, Perlmutter 1989, Burzio 1986, among others), examples (50-51) show that perfect auxiliary selection lends support for the two categories of intransitive Hittite verbs. Verbs that regularly attest with clitic subjects select the perfect auxiliary *eš-* ‘be’, while unergative verbs and transitive verbs, which never attest with clitic subjects, select the perfect auxiliary *hark-* ‘have’ (Garrett 1996).

Garrett (1996) explains that when attributive participles are formed from transitive verbs they are usually decausative in a sense similar to the decausative verbs discussed at the beginning of this section. A predicative example is given in (52) below. An attributive participle can come from either an intransitive or transitive verb. Example (53) below is formed from the transitive verb *ark-* ‘mount (sexually)’.

- (50) KUR ^{URU}Nerik ḫūdak=pat karūliyaš
 land of Nerik quickly=FOC previous (DAT.PL)
 ANA LUGAL.MEŠ karū
 kings (DAT) previously
 ḫarkanza **ēšta**
 perish (PTCPL.NOM.SG) **was** (3SG)

‘Previously under previous kings the land of Nerik **had** indeed quickly **perished**.’

(51) annišan=pat=an ^mNIR.GÁL-iš

previously=FOC=ACC3SG Muwatalli (NOM)

LUGAL-uš ANA ABU-YA ^mḪattušili

king (NOM) my father (DAT) Ḫattušili (DAT)

šallanummanzi **piyan** **ḫarta**

great (CAUSE.INF) **give** (PTCPL.NT.SG) **had** (3SG)

‘Muwatalli the king **had** previously **given** him to my father Ḫattušili to be reared.’

(52) n=aš=za ITTI ^mAppu **waššanza** šeškit

INTR=NOM3SG=REFL with Appu **put on clothes** (PTCPL.NOM.SG) lay (3SG)

‘She lay down **clothed** with Appu.’

(53) 10 UDU ḪIA ... natta **arkanteš** LÚ.MEŠ ^{URU}Zipalanda danzi

ten sheep NEG **mount** (PTCPL.ACC.PL) people of Zipalanda take (3PL)

‘The people of Zipalanda take ten **unmounted** sheep.’

Notice that the participles formed from the telic verbs *wass-* ‘put on (clothes)’ and *ark-* ‘mount (sexually)’ are also telic in that they indicate situation types that are bounded/delimited (i.e., the participles mean ‘put on’ and ‘mounted’ respectively instead of ‘being put on’ or ‘being mounted’), whereas the participles formed from atelic verbs denote situation types that are unbounded/non-delimited (Garrett 1996, 103).

After reviewing several semantic features and syntactic configurations, Garrett suggests, as a preliminary conclusion, that Hittite unaccusative verbs have subjects that “are, or come to be, in a definite state or location” (Garrett 1996, 111). The other intransitive verbs in Hittite are unergative.

Garrett’s argument for the classification of Hittite intransitive verbs into unaccusatives and unergatives can be further strengthened by considering the affectedness of the arguments of the intransitive verbs. Tenny (1994) argues that direct internal arguments typically denote affected entities. Consider the data from example (39), copied below in (54). The lone argument is affected and, therefore, plausibly an underlying direct object.

- (54) [n]=aš INA MU.3.KAM GEME-re[šzi]
 INTR=NOM3SG in three years unfree (INCH3SG)

‘In three years **he** will become unfree.’

Furthermore, Nakipoğlu (1998) argues that the lone arguments of unaccusative verbs in Turkish denote things with an externally instigated state or change. In example (42), copied below in (55), someone or something external instigated the fear that the subject experienced. Likewise, the lone arguments of some of the Hittite verbs listed in Appendix A such as the stative verb *huišw-ē-* ‘be alive,’ the psychological verb *aršaniya-* ‘be envious,’ and the change of state verbs *huršakniya-* ‘burst,’ *kiš-* ‘become,’ *mayant-ešš-* ‘grow up,’ *mī-ešš-* ‘become gentle,’ *parkaw-ešš-* ‘become pure,’ *šupp-ešš-* ‘become holy,’ and *zeya-* ‘be cooked’ denote things with externally instigated states or changes, which suggests that what Nakipoğlu demonstrated for Turkish unaccusative verbs appears to be true of certain Hittite intransitive verbs.

- (55) n=aš naḥta
 INTR=NOM3SG feared (3SG)

‘(**He**) was afraid.’

To summarize, subject clitics regularly occur with unaccusative verbs (i.e., middle decausatives, middle reflexives, change-of-state verbs, stative verbs, psychological verbs, direction-of-motion verbs, manner-of-motion verbs, and a group of miscellaneous verbs). Subject clitics do not occur with unergative verbs (i.e., object-suppression detransitives, object-demotion detransitives, a group of miscellaneous verbs, or transitive verbs). It is also interesting to note that pronominal clitic distribution coincides with perfect auxiliary selection in Hittite, and perfect auxiliary selection follows the perfect auxiliary selection diagnostic in Dutch and Italian (fellow Indo-European languages).

1.6 Variable Behavior Verbs

The lists of unergative and unaccusative predicates provided in section 1.2, did not include variable behavior verbs. Perlmutter (1978) suggests that there are several reasons for excluding them from the list. He points out that the verbs listed are meant to be thought of as semantic predicates, not

English verbs with a particular phonological configuration because many English verbs, particularly verbs of motion, can be used in more than one type of clause. For example, the English verb *slide* can be used in a simple unaccusative clause (example 56), a clause with an agentive subject (example 57), or a clause where it is ambiguous as to whether or not the subject exhibits control over the action (example 58).

(56) The sled slid down the hill.

(57) The baseball player slid into home plate.

(58) The priest slid on the ice.

Levin and Rappaport Hovav (1995) call verbs that demonstrate regular polysemy *variable behavior verbs* because they are realized in a range of syntactic structures and they exhibit varying patterns of syntactic behavior. A verb's association with multiple meanings can affect their behavior regarding the Unaccusative Hypothesis. For example, when the English verb *roll* takes an animate agentive subject it is able to participate in the unergative diagnostic, *X's way*-construction, and in the unergative resultative pattern, but not in the unaccusative resultative pattern; however, when *roll* takes an inanimate subject it is able to participate in the unaccusative resultative construction, but not the *X's way*-construction as demonstrated in the following examples:

(59) The children rolled *their way* down the hillside.

(60) The children rolled the snow mounds flat. (The relevant reading is that the children used their bodies to flatten the snow mounds.)

(61) *The curtain rolled itself open.

(62) The curtain rolled *open* when the movie began.

(63) *The pebbles rolled *their way* down the hillside.

The discussion will return to this topic as this research attempts to use Optimality Theory to account for variable behavior verbs in the discussion in at the end of Chapter 4.

CHAPTER 2: OPTIMALITY THEORY

2.1 Preliminaries

Within the framework of Optimality Theory (Prince and Smolensky 1991, 1993; McCarthy and Prince 1993), a formal mechanism called a *generator* (GEN) is introduced that creates an infinite list of candidates, including ungrammatical ones, from the input received. The input is a bit of language with no structural analysis, such as a string of sounds with no syllable structure or a string of words with no particular phrase structure assigned to it. From this input, GEN produces every possible structural analysis. For example, GEN would create all possible syllable structures for the string of sounds, or all possible allophones for the phonological segment, or all possible phrase structures for the string of words. All of the structural representations generated from the input are considered output forms. In addition, a filtering device (EVAL) is charged with evaluating the acceptability of each of the input-output forms which is derived from the application of the constraints. The set of constraints is considered to be universal and language variation arises from the distinct constraint ranking that characterizes a given language.

The next section reviews the formulation of Optimality Theory and the work of Prince and Smolensky (1993) whose linguistic theory has been called “THE Linguistic Theory of the 1990s” (Archangeli 1997, 1). Section 2.4 explains two formal mechanisms (i.e., the generator [GEN] and evaluator [EVAL]), the input, the universal constraint hierarchy, and the use of a tableau.

Section 2.5 discusses split-intransitivity, auxiliary selection, gradience, and variation in French and Italian from an optimality-theoretical perspective (Legendre and Sorace 2003). The exposition of their work is essential to this dissertation research because their use of Optimality Theory is the precedent for using the theoretical framework in a context where the point is not to select from among infinite structural representations generated by GEN, but to make a classification such as choose E or A; or classify a verb as unergative or unaccusative.

2.2 Optimality Theory

Prince and Smolensky (1991, 1993) explore the idea that Universal Grammar comprises a set of constraints on representational well-formedness. They argue that the constraints are highly conflicting in a given language and that these constraints make drastically discordant claims regarding the well-formedness of representations. A substantive theory of Universal Grammar consists of the constraints along with the means of resolving the conflicts (Prince and Smolensky 1993). Central to Optimality Theory is the means for distinguishing which structural representation of the input best satisfies the set of conflicting constraints. Optimality Theory relies on a *strict dominance hierarchy*; this means that the satisfaction of one constraint takes complete precedence over the satisfaction of every lower ranked constraint in the hierarchy.

There is an input-output pair that is called a *candidate*. According to Prince and Smolensky (1993), a formal mechanism called a *generator* (GEN) contains all the information about relationships between primitives and language universals. There is also an *H-eval* function that is responsible for determining the relative Harmony among candidates (Prince and Smolensky 1993, 5). The Harmony of a particular analysis refers to “the degree to which a possible analysis of an input satisfies a set of conflicting well-formedness constraints” (Prince and Smolensky 1993, 3). The candidate that best satisfies the set of constraints (i.e., the most harmonic analysis of the input) is considered the optimal output. The formal structure of the grammar of Optimality Theory is shown below:

$$\text{a. GEN (In}_k\text{)} \quad \rightarrow \quad \{\text{Out}_1, \text{Out}_2, \dots\}$$

$$\text{b. H-eval (Out}_i, 1 \leq i \leq \infty \text{)} \quad \rightarrow \quad \text{Out}_{\text{real}}$$

The formalism above means that from any given input (In_k), GEN creates a large number of output forms represented as $\{\text{Out}_1, \text{Out}_2, \dots\}$ in (a). Each input-output pair (i.e., candidate) represented as (Out_i) in (b) undergoes harmonic evaluation (H-eval). The output of the entire procedure (Out_{real}) is the candidate that best satisfies the constraint profile.

Prince and Smolensky (1993) argue that Optimality Theory moves away from theories of operations and toward a theory of well-formedness. It is the job of the system of universal constraints

ranked by the grammar of the language in question to single out the optimal candidate by resolving any well-formedness conflicts with a higher-ranked constraint. This means that the satisfaction of a higher-ranked constraint is given absolute priority over all lower-ranked constraints. For example, if GEN produces candidate A and candidate B from a particular input and the grammar has two constraints with Constraint 1 ranked higher than Constraint 2 and A satisfies Constraint 2 but violates Constraint 1, whereas B satisfies Constraint 1 but violates Constraint 2, then candidate B would be selected as the optimal candidate.

2.2.1 Understanding Input, GEN, CON, and EVAL

According to Archangeli (1997), the input is comprised of a vocabulary for language representation provided by Universal Grammar. The only restriction on the input is that it be well-formed in the sense that it does not contain non-linguistic objects. For example, in the realm of phonology, this vocabulary contains, but is not limited to, vowels, consonants, and syllables.

The GEN function is able to create infinite forms from the input with the only restriction being that all of the candidates created are composed of the same vocabulary that controls inputs. The generator function, in theory, creates a candidate set that is infinite and “also has the job of indicating correspondences between input and output representations” (Archangeli 1997, 14).

CON (i.e., the universal constraint set) is the set of constraints whose variable ranking makes possible the distinct grammar of every language. For example, a few general tendencies of syllables are listed in Table 2.1 along with the standard terms in Optimality Theory used for the constraint. There are two ways that constraints can be stated: positively (e.g., PEAK) or negatively (e.g., *COMPLEX) using the negative operator (*). All constraints are considered violable. This means that it is possible for any given constraint to be violated in some language.

The EVAL mechanism is tasked with selecting the optimal candidate from the set created by GEN. In order to do so, EVAL uses the ranked constraint set of a particular grammar in evaluating the set of generated candidates. The candidate that best satisfies the constraint ranking is selected as the

optimal one. It is also possible for a tie to occur. When there are two higher-ranked constraints that tie by either satisfaction or violation, the tie is broken by the satisfaction of lower-ranked constraints.

Table 2.1 Typical Properties of Syllables

Syllables begin with a consonant	ONSET
Syllables have one vowel	PEAK
Syllables end with a vowel	NOCODA
Syllables have at most one consonant at an edge	*COMPLEX

It is necessary to discuss an example to illustrate how all of these elements come together. Table 2.2, taken from Archangeli (1997, 8), lists some general tendencies of syllables and how they are realized in Yawelmani. Since some syllables in Yawelmani end with a consonant, the NOCODA constraint must be dominated by other less violable constraints. As can be seen in Table 2.2, Yawelmani does not permit violations of PEAK, ONSET, or *COMPLEX; therefore, these constraints must dominate the violable NOCODA constraint.

Table 2.2 Properties of Yawelmani Syllables


<i>GENERAL TENDENCY</i>	Yawelmani
PEAK: syllables have one vowel	Always
ONSET: syllables begin with a consonant	Always
*COMPLEX: syllables have at most one consonant at an edge	Always
NOCODA: syllables end with a vowel	Sometimes

It is important to understand that constraint violations indicate markedness, patterns, and violations (Archangeli 1997). Another set of constraints that is common not only to phonology, but to all sub-disciplines of linguistics is the set of FAITHFULNESS constraints that require the input to be identical to the output. However, as with other violable constraints, deviations from FAITHFULNESS can occur when some other constraint outranks it.


In Yawelmani, the only syllabification constraint that may be violated is the NOCODA constraint. Therefore, there are two necessary FAITHFULNESS constraints: one involving the faithfulness of

consonants (FAITHC) and one involving the faithfulness of vowels (FAITHV). In order to understand their necessity, one needs to examine ways in which to avoid a violation of NOCODA. The following discussion will use the input example /xat-en/ and the resulting optimal candidate [xa.ten] from Table 2.3.

Table 2.3 An Illustration of the Selection of the Optimal Candidate [xa.ten] in Yawelmani

/xat-en/	PEAK	ONSET	*COMPLEX	FAITHC	FAITHV	NOCODA
 xa.ten						*
xa.te.n	*!					
xa.te				*!		
xa.te.ni					*!	

If one syllabifies the final consonant of /xat-en/ as a syllable by itself (i.e., *xa.te.n), a violation of PEAK has occurred thereby avoiding a violation of NOCODA; however, Yawelmani does not permit such a violation. Another option would be to delete the final consonant (i.e., *xa.te). Since the optimal candidate [xa.ten] shows that the final consonant does not delete, there must be a FAITHC constraint that ranks higher than NOCODA. Finally, a vowel could be inserted following the final consonant (i.e., *xa.te.ni), which would violate a FAITHV constraint but preserve the NOCODA constraint. The optimal candidate [xa.ten] lacks vowel insertion; therefore, a constraint on the faithfulness of vowels must rank higher than NOCODA.

In Optimality Theory, the input, the candidates, and the set of constraints are put in a tableau to illustrate how these elements work together. In the tableau, each row records the constraint violations for a particular candidate. An asterisk (*) marks a violation, an exclamation point (!) marks a fatal violation, shading occurs in the cells of the tableau that are not relevant due to a higher-ranked constraint violation, and the optimal candidate is indicated with the symbol “”. Solid lines between constraint columns signify a crucial ranking, whereas dotted lines between the columns denote constraints that are not ranked with respect to one another. In Table 2.3 taken from Archangeli (1997, 12), only the NOCODA cells are shaded because it is the one constraint that must be dominated in the constraint set. Notice that

each of the last three candidates violate a constraint that is ranked higher than NOCODA; therefore, [xa.ten] is the optimal or best candidate.

2.3 The Auxiliary Selection Hierarchy

Legendre and Sorace (2003) analyze the problem of gradience and cross-linguistic variation in split-intransitivity and offer an optimality-theoretical analysis to account for the variation and gradience. They set out to explain two types of unaccusativity mismatches: those across languages for a certain diagnostic of unaccusativity and those across diagnostics of unaccusativity within a language.

The Auxiliary Selection Hierarchy (Sorace 2000) identifies a specific set of characteristics common to split-intransitivity in several Western European languages: (a) cross-linguistically, there is consistency in the unaccusative and unergative behavior of certain verbs; (b) language specifically, there are certain verbs whose unaccusativity and unergativity are not variable, while there is variation in the behavior of certain other intransitive verbs. Native speaker intuitions regarding auxiliary selection, a diagnostic of unaccusativity, provide support for the Auxiliary Selection Hierarchy (henceforth ASH) (Sorace 1992, 1993a, 1993b).

Languages such as French, Italian, Dutch, and German exhibit an alternation in auxiliary that can appear grammatically. Unaccusative verbs tend to select the counterpart of the English auxiliary *be*, whereas, unergative verbs tend to select the counterpart of the English auxiliary *have*. However, native speakers' selection of auxiliary verb is consistent for certain types of intransitive verbs and less so for other types of verbs. Sorace (2000) suggests that the differences in auxiliary preferences among native speakers point to a hierarchy that classifies "core" unaccusative/unergative verbs from more "peripheral" verbs (i.e., verbs outside the "core" set). The order of the hierarchy is as follows, listing invariable verb types that select *be* to invariable verbs that select *have*: CHANGE OF LOCATION (least variation) > CHANGE OF STATE > CONTINUATION OF A PRE-EXISTING STATE > EXISTENCE OF STATE > UNCONTROLLED PROCESSES > CONTROLLED PROCESSES (MOTIONAL) > CONTROLLED PROCESSES (NON-MOTIONAL) (least variation). The verb types on either end of the hierarchy are the ones considered to be

core unaccusatives or core unergatives. Progressing toward the middle of the hierarchy, one finds the more peripheral unaccusative- and unergative-verb types (Sorace 2000; Legendre and Sorace 2003).

Legendre and Sorace (2003) suggest that the more peripheral verb types exhibit variation cross-linguistically (e.g., one language's selection of auxiliary *be* and another's selection of auxiliary *have* for a semantically synonymous verb) because, depending on the conceptualization of a verb type, different argument structures are possible. They argue that peripheral verbs are more likely to exhibit this varying behavior because these verbs have less stable event-type structures (Sorace 2000).

Obviously, there is a difference across languages in the cut-off point for verbs that select *be* and those that select *have*, since not all languages exhibit the same system of auxiliary selection. According to Legendre and Sorace (2003), the cut-off point varies within the peripheral-verb types of the ASH but does not seem to affect the core-verb types.

2.4 An Optimality-Theoretical Perspective of Auxiliary Selection in French and Italian

Auxiliary selection in Italian (i.e., *essere*/E 'be' vs. *avere*/A 'have') is considered a diagnostic of unaccusativity. It is not a reliable diagnostic of unaccusativity in French because only a small portion of French unaccusative verbs select E. Table 2.4 (taken from Legendre and Sorace 2003, 14) is set up to parallel the ASH and demonstrates that this group of French unaccusative verbs is a subset of the ones that select E in Italian. It is important to note that the verbs that vary between French and Italian auxiliary selection are exactly the more peripheral verbs in the hierarchy.

Legendre and Sorace (2003) suggest that using harmonic alignment (Prince and Smolensky 1993) with regard to unaccusativity involves using the semantic and aspectual features from Table 2.4 and restating them as scales.¹⁴ Consider a set of abstract scales shown in examples (1-3) from Legendre and Sorace (2003). These scales do not express markedness. This means, for example, directed change is not inherently less marked than non-directed change.

¹⁴ According to Legendre and Sorace (2003), the use of the term *prominence scales* may or may not be appropriate for the discussion here. In terms of alignment, the existence of scales is important even if these particular scales are less clear (or abstract) than the case of sonority scales in phonology.

Table 2.4: Auxiliary Selection for Monadic Intransitive Verbs in French and Italian

Auxiliary Selection		Semantic/aspectual features →	TE	MO	DIR	CON	ST
French	Italian	Emergent verb classes ↓					
E	E	Change of Location: arrive (<i>arriver</i> (à); <i>arrivare</i>)	+	+	+	+/-	-
E	E	go to (<i>aller</i> à; <i>andare</i>)	+	+	+	+/-	-
E	E	come (<i>venir</i> (à) <i>venire</i>)	+	+	+	+/-	-
E	E	Change of State: a. change of condition die (<i>mourir</i> ; <i>morire</i>)	+	-	+	-	-
E	E	b. appearance appear (<i>apparaître</i> ; <i>apparire</i>)	+	-	+	-	-
A	E	c. indefinite change in a particular direction wilt (<i>faner</i> ; <i>appassire</i>)	-	-	+	-	-
A	E	worsen (<i>empirer</i> ; <i>peggiorare</i>)	-	-	+	-	-
A	E	Continuation of a pre-existing state: last (<i>durer</i> ; <i>durare</i>)	-	-	-	-	+
A	E	Existence of state: be (<i>être</i> ; <i>essere</i>)	-	-	-	-	+
A	E	exist (<i>exister</i> ; <i>esistere</i>)	-	-	-	-	+
A	A	Uncontrolled processes: a. bodily functions sweat (<i>suer</i> ; <i>sudare</i>)	-	-	-	-	-
A	A	b. involuntary actions tremble (<i>trembler</i> ; <i>tremblare</i>)	-	-	-	-	-
A	A	c. emission resound (<i>résonner</i> ; <i>risuonare</i>)	-	-	-	-	-
A	A	Controlled processes (motional): swim (<i>nager</i> ; <i>nuotare</i>)	-	+	-	+	-
A	A	Controlled processes (non-motional): work (<i>travailler</i> ; <i>lavorare</i>)	-	-	-	+	-
TE = inherent telicity; MO = motional displacement; DIR = directed change; CON = protagonist control (agentivity); ST = state (no change)							

(1) Eventive scales:

no motion > motion

non-directed change > directed change

control > no control

change > state

(2) Aspectual scales:

atelic > telic

(3) Grammatical Function scales:

1 (Subject) > 2 (Direct Object)

(4) Harmonic Alignments:

a. 2/telic > 1/telic

b. 1/atelic > 2/atelic

(5) Constraint Alignments:

a. *1/telic >> *2/telic

b. *2/atelic >> *1/atelic

The harmonic alignments formed from the scales demonstrate the preference for mapping between certain properties (i.e., telic and 2 or atelic and 1). Example (4) should be read: “the mapping of telic onto an underlying 2 is *more harmonic than* (or less marked than) the mapping of telic onto an underlying 1. Note that harmonic alignment gives both [4a] and [4b] when two scales are aligned” (Legendre and Sorace 2003, 16-17). In other words, (4a) means that the lone argument of an intransitive verb that is telic is preferred in object position and (4b) means that the lone argument of an intransitive verb that is atelic is preferred in subject position. From the harmonic alignments, the constraints can be formulated. Notice the symbol changes in example (4) from > ‘more harmonic than’ to >> ‘outranks’ in example (5), and that the elements on either side of the symbol swap positions when the constraints are formulated. Note the symbol (*) means ‘do not align X with Y’. Therefore, the constraint alignment in (5a) says that putting the lone argument of a telic unaccusative verb in subject position is a worse violation than putting it in object position, whereas (5b) says that putting the lone argument of an atelic verb in object position is a worse violation than putting it in subject position. These are the constraint rankings against which candidates are evaluated.

Legendre and Sorace (2003) suggest the universal ranking: *1/TE >> *1/DIR >> *1/ST >> *1/-CON >> *1/MOT and aver that without a constraint against mapping onto a 2, cross-linguistic mismatches would not exist and all intransitive verb classes would be syntactically unaccusative.

However, since there is much evidence to the contrary, they propose a universal *2 (i.e., don't map onto an unaccusative configuration) constraint. In other words, *2 means that the unaccusative structure is more marked than the unergative structure. The *2 constraint would slide along Legendre and Sorace's proposed universal constraints and result in a movable (i.e., gradient) cut-off point across languages.¹⁵ It is worth noting that they could have set up the universal ranking from the other perspective (i.e., *2/-TE >> *2/-DIR >> *2/CHANGE >> *2/CON >> *2/-MOT) and suggested a constraint against mapping onto a 1, since without it all intransitive verb classes would be syntactically unergative. Regardless of the choice, the outcome would be the same but arrived at from a different direction.

Legendre and Sorace (2003) assert that the difference between French and Italian results from the difference in the position of the *2 constraint along the hierarchy. Consider the following:

(6) French: *1/TE >> *2 >> */DIR >> *1/ST >> *1/-CON >> *1/MOT

(7) Italian: *1/TE >> */DIR >> *1/ST >> *2 >> *1/-CON >> *1/MOT

The following tableaux (Tables 2.5-2.8) are taken from Legendre and Sorace (2003) to exemplify auxiliary selection in French and Italian. The constraint ranking reads as follows for French:

do not map inherent telicity (TE) onto an underlying subject >> (i.e., outranks or is a worse violation than)

do not map onto an unaccusative configuration (*2) >>

do not map directed change (DIR) onto an underlying subject >>

do not map stative (ST) onto an underlying subject >>

do not map minus protagonist control (-CONT) onto an underlying subject >>

do not map motional displacement (MOT) onto an underlying subject.

Table 2.5 shows that the French verb *arriver* selects E which satisfies each of the constraints, but violates the *2 constraint as evidenced by the violation symbol (*) in the column, which is a higher

¹⁵ Legendre and Sorace (2003) note that a more in-depth analysis of the *2 constraint would involve considering replacing the *2 with a harmonic alignment constraint of the sort 1/A > 2/A and 2/E > 1/E yielding the constraint rankings: *1/E >> *2/E and *2/A >> *1/A.

ranked constraint (i.e., a worse violation) than the A candidate's violations of the *1/DIR and *1/MOT constraints. However, A violates the highest ranked *1/TE constraint creating a fatal violation, hence the notation (!) after the asterisk.

Table 2.5 French Tableau: Change of Location: *Arriver* 'Arrive'



	*1/TE	*2	*1/DIR	*1/ST	*1/- CONT	*1/MOT
 E		*				
A	*!		*			*

Table 2.6 Italian Tableau: Change of Location: *Arrivare* 'Arrive'

	*1/TE	*1/DIR	*1/ST	*2	*1/- CONT	*1/MOT
 E				*		
A	*!	*				*

Tables 2.5-2.8 show that French and Italian both take E with 'arrive' *arriver* and *arrivare* respectively, but French takes A for *être* 'be' and Italian takes E for *essere* 'be'.

Table 2.7 French Tableau: Existence of State: *Être* 'Be'



	*1/TE	*2	*1/DIR	*1/ST	*1/- CONT	*1/MOT
E		*!				
 A				*	*	

Table 2.8 Italian Tableau: Existence of State: *Essere* 'Be'

	*1/TE	*1/DIR	*1/ST	*2	*1/- CONT	*1/MOT
 E				*		
A			*!		*	

While Tables 2.4-2.7 demonstrate that differing cut-off points on the hierarchy correctly distinguish which verb classes are unaccusative in each of the two languages, Legendre and Sorace (2003) propose that an optimality-theoretical analysis is able to account for the variation shown by some peripheral verb classes on the ASH within a particular language. They argue that a partial ranking (i.e., some fluctuation in the ranking of the *2 and the *1/x constraints) yields different optimal outputs. This

means that if the *2 constraint were to float over the first four positions in the constraint hierarchy, four rankings for the class of [+TE, +DIR, +ST] verbs would be obtained (Legendre and Sorace 2003, 21).

Consider the following representations given by Legendre and Sorace (2003):

(8) Fixed: *1/TE >> *1/DIR >> *1/ST

Floating: ←-----*2-----→

(9) a. *2 >> *1/TE >> *1/DIR >> *1/ST

b. *1/TE >> *2 >> *1/DIR >> *1/ST

c. *1/TE >> *1/DIR >> *2 >> *1/ST

d. *1/TE >> *1/DIR >> *1/ST >> *2

With the variation in potential optimal outputs, these rankings produce different percentages of verbs selecting one auxiliary over the other. For example, +TE verbs would select E (i.e., would be unaccusative) in rankings (b-d), which would be 75% of the time because of the floating *2 constraint, whereas +ST verbs would be unaccusative only 25% of the time. In other words, a +TE verb outranks the do not map onto an unaccusative constraint (*2) in rankings a, b, and c. A +ST verb only outranks the *2 constraint in ranking d. This illustrates that variation is more likely to occur in the middle of the range.

This optimality-theoretical analysis makes a couple of correct predictions regarding split-intransitivity across languages: some languages demonstrate no split-intransitivity regarding auxiliary selection and different languages have different cut-off points on the universal hierarchy.

CHAPTER 3: SPLIT-INTRANSITIVITY IN SWAHILI

3.1 Introduction

Recall that much research has been done on English and other languages (Perlmutter 1978, Burzio 1986, Legendre 1989, Marantz 1992, Zaenen 1993, B. Levin and Rappaport 1995, Kishimoto 1996, among others); however, investigation into the split-intransitivity of verbs in Swahili is all but non-existent. The void in this area of research is such that researchers such as Seidl and Dimitriadis (2003), Mchombo (1993), and others make claims regarding the behavior of Swahili intransitive verbs which they refer to as either unaccusative- or unergative-type without data to support the claim that those particular verbs exhibit the properties of either categorization. After searching for research to support such claims, I conclude that theoretically-driven research of unaccusativity does not exist for Swahili.

The goal of this dissertation research is to examine the syntactic, semantic, and morphological behavior of Swahili intransitive verbs in order to fully delineate the set of verbs that pattern as unaccusative- or unergative-type verbs in the language. This research presents the results of the seminal research in the area of unaccusativity in Swahili.

Since similar research of unaccusativity has been done in many languages, this research examines the potential for using the diagnostics of unaccusativity in other languages as a method of discovery for Swahili split-intransitivity. However, the same diagnostics used for one language are not necessarily helpful in another. For example, English resultative adjectives are resultative on the object, which is a helpful diagnostic tool in identifying an unaccusative verb in English, but resultative adjectives do not function comparably in Swahili. Consider:

- (1) The waiter wiped the table *clean*.
- (2) *The waiter wiped the table *tired*.
- (3) The table was wiped *clean*.

In example (1), the adjective *clean* describes the state of the table after the waiter wiped it. In rather stilted English, the meaning of (1) would be ‘the waiter’s wiping of the table resulted in the table being clean’. Therefore, the adjective *clean* is resultative on the object of the sentence, *the table*. However, in example (2), the adjective *tired* refers to the subject, but it cannot be said that the adjective is resultative on the subject because *tired* describes the state of the waiter throughout the action of wiping the table. It does not mean that the wiping of the table resulted in the waiter being tired. Thus, a resultative adjective can only be resultative on an object. In example (3), *prima facie*, one observes that the adjective *clean* appears to be resultative on the subject. However, (3) is a Passive sentence; therefore, the adjective is actually resultative on the D-Structure object that has moved into the S-Structure subject position through passivization. Hence resultative adjectives are a diagnostic of unaccusativity in English.

The following Swahili examples are an attempt to adapt the English resultative-adjectives diagnostic to Swahili. Consider two Swahili translations for (1):

(a) M-hudumu a-li-futa meza safi.

CL 1 SG-waiter CL 1 3rd SG SM-PAST-wipe CL 9 SG table clean

‘waiter’ ‘wiped’ ‘table’ ‘clean’

‘The waiter wiped the clean table.’

(b) M-hudumu a-li-futa meza.

CL 1 SG-waiter CL 1 3rd SG SM-PAST-wipe CL 9 SG table

‘waiter’ ‘wiped’ ‘table’

‘The waiter wiped the table.’

Example (a) is a direct translation from English to Swahili. The Swahili verb *futa* has several meanings including ‘wipe, clean, and cleanse’. The only accessible meanings of (a) to a native Swahili speaker are ‘the waiter wiped/cleaned/cleansed the clean table’. Although a Swahili speaker upon hearing (a) might ask why a waiter would clean a clean table, the structure of the example is grammatical. In fact, a context can be constructed where such an utterance would be appropriate. For

example, a restaurant manager is evaluating the wait-staff for annual bonuses. After having several waiters clean the tables in the dining area, the manager checks the waiters' work. Upon finding one clean table (by restaurant standards) in the lot, the manager asks *Nani alifuta meza safi?* 'Who wiped/cleaned/cleansed the clean table?'. Although example (a) above is the "closest" translation of (1) in terms of translating all the words, example (b) above is the semantically closest translation of (1) into Swahili; however, the meaning of this Swahili sentence is 'the waiter wiped/cleaned/cleansed the table'. Therefore, the resultative meaning of the English example (1) is lost in the translation. There are a couple of possible reasons for this. First, resultativity in Swahili is realized differently. Second, the structure of the Swahili NP is such that adjectives generally post modify their head N. Thus, the appearance of the adjective *safi* 'clean' after the noun *meza* 'table' in (a) above only makes accessible an attributive meaning of the adjective.

This section examines intransitive verbs used with verbal stative clauses in Swahili to analyze their possible role in describing split-intransitivity in Swahili. Consider the following data:

(c) Wa-safiri wa-li-wasili wa-ki-wa
 CL 2 PL-traveler CL 2 3rd PL SM-PAST-arrive CL 2 3rd PL SM-PROG-be
 'travelers' 'arrived' 'being'

wa-me-choka

CL 2 PL SM-PERF-tired STAT

'tired'

'The travelers arrived tired.'

(d) Vi-tabu vi-li-toka maji-ni i-ki-wa
 CL 8 PL-book CL 8 SM-PAST-come from STAT CL 6 water-LOC CL 8 SM-PROG-be
 'books' 'emerged' 'at water' 'being'

vi-me-haribika

CL 8 SM-PERF-damaged STAT

‘damaged’

‘The books emerged from the water damaged.’

(e) Wa-tu wa-li-kimbia wa-ki-wa

CL 2 PL-person CL 2 3rd PL SM-PAST-run CL 2 3rd PL SM-PROG-be

‘people’ ‘ran’ ‘being’

wa-me-choka

CL 2 3rd PL SM-PERF-tired STAT

‘tired’

‘The people ran tired.’

(f) Wa-tu wa-li-ogelea wa-ki-wa

CL 2 PL-person CL 2 3rd PL SM-PAST-swim CL 2 3rd PL SM-PROG-be CL 2

‘people’ ‘swam’ ‘being’

wa-me-choka

3rd PL SM-PERF-tired STAT

‘tired’

‘The people swam tired.’

Although, the Swahili examples (c-f) are equally grammatical, they do not have parallel meanings.¹⁶ It is worth noting that in (c-d) above the travelers are tired and the books are damaged as a result of the underlying processes, traveling and being submerged respectively, presupposed by the verbs *wasili* ‘arrive’ and *toka* ‘emerge’. However, in examples (e-f), *choka* ‘tired’ is the people’s state of

¹⁶ The fact that the main verb in examples (d) above and (m-o, r) below and the verb in the subordinate clause in (p-q) below contain the Swahili stative verbal affix -k- has not gone unnoticed. More research is needed to identify the importance of the affix in delineating the class of unaccusative verbs. It is not considered to be a confounding factor because not all of the Swahili verbs that are categorized in this paper as unaccusative contain the verbal affix (See examples c, s.).

being throughout the duration of the action of running and swimming respectively. They are not tired as a result of running or swimming. One may argue that the reason the travelers are not tired due to their arrival is an artifact of language in that *wasili* ‘arrive’ and *toka* ‘emerge’ are non-durative, whereas *kimbia* ‘run’ and *ogelea* ‘swim’ are durative. This is true of the nature of the verbs, but regardless of the non-durative (*wasili/toka*) or durative (*kimbia/ogelea*) status of the verbs, a Swahili speaker is unable to access the meaning ‘the people became tired by running’ in example (e) or ‘the people became tired by swimming’ from example (f). This is not to say that it is impossible for a Swahili speaker to construct sentences that mean ‘the people became tired by running/swimming’. It only means that (e-f) are not those sentences. In order for a Swahili speaker to achieve such a meaning, the speaker would have to use the form exemplified in (g-h) below.

(g) Wa-tu wa-li-ji-cho-sha kwa ku-kimbia.

CL 2 PL-person CL 2 3rd PL SM-PAST-REFL-tire-CAUS by INF-run

‘people’ ‘made themselves tired’ ‘by’ ‘running’

‘The people ran themselves tired.’

(h) Wa-tu wa-li-ji-cho-sha kwa ku-ogelea.

CL 2 PL-person CL 2 3rd PL SM-PAST-REFL-tire-CAUS by INF-swim

‘people’ ‘made themselves tired’ ‘by’ ‘swimming’

‘The people swam themselves tired.’

Compare (c-h) above to their nearest English counterparts (4-9) below:

(4) The travelers arrived *tired*.

(5) The books emerged from the water *damaged*.

(6) *The people ran *tired*.

(7) *The people swam *tired*.

(8) The people ran *themselves* tired.

(9) The people swam *themselves* tired.

Notice the difference in the verbal affixation of the two sets of Swahili examples, (e-f) and (g-h). The examples (g-h) use the Swahili reflexive prefix *-ji-* and the causative suffix *-sha*, which is conceptually the same thing an English speaker does in order to create a resultative meaning for the adjective *tired* in examples (6-7). An English speaker inserts the reflexive pronoun *themselves* giving the adjective *tired* an object upon which to be resultative. The English examples (4, 5, 8-9) exemplify the resultative construction in English, which, as mentioned in the introduction, is a diagnostic tool in the classification of English intransitive verbs as unaccusative or unergative.

As evidenced at the beginning of this section, verbal stative clauses used with *wasili* ‘arrive’ and *toka* ‘emerge’ type verbs in examples (c-d) above demonstrate a form of resultativity that is not present when the verbal stative clause is used with a *kimbia* ‘run’ or *ogelea* ‘swim’ type verb as in examples (e-f) above. The difference in the interpretation of the clause when it is used with these two types of verbs provides evidence that the *wasili* ‘arrive’ and *toka* ‘emerge’ type verbs are unaccusative and the *kimbia* ‘run’ and *ogelea* ‘swim’ type verbs are unergative. However, this assertion is made tentatively because at present no evidence can be provided to conclusively demonstrate that the subjects of these verbs are actually D-Structure objects. The only evidence available at this time is the similarity of meaning between the Swahili examples (c-h) and their English counterparts (4-9). Nevertheless, what has been conclusively demonstrated thus far is that split-intransitivity exists in Swahili.

3.2 Resultativity in the Form of a Reduplicated Noun

For the sake of being able to demonstrate unaccusativity in Swahili, behavioral differences between subjects and objects must be evidenced. Clearly, the best way to examine the behavior of objects and/or the behavior of other parts of the sentence on objects is to look at transitive verbs. This section explores data in Swahili using a transitive verb to illuminate a type of resultativity that occurs on an object with the use of a reduplicated noun. This description is then followed by a discussion of its importance in evidencing unaccusativity in Swahili.

Examining the Swahili verb *vunja* ‘break’ in this research was an attempt to demonstrate unaccusativity via the causative/inchoative alternation (Levin 1993). This alternation involves a change

in a verb's transitivity. Notice that the object of the transitive sentence (9) and the subject of the intransitive sentence (10) bear the same semantic role. In this case, *the cup*, in both (9) and (10), bears the PATIENT θ -role.

(10) I broke the cup. (Causative)

(11) The cup broke. (Inchoative)

Several verbs commonly referred to as prototypical unaccusative verbs participate in the causative/inchoative alternation, including verbs such as *break*, *dry*, and *open* (i.e., change-of-state verbs in English) as well as similar verbs in other languages (Levin and Rappaport Hovav 1995, 80). Consider the same sentences in Swahili:

(i) Mimi ni-li-vunja ki-kombe
 1st SG 1st SG SM-PAST-break CL 7 SG-cup
 'I' 'broke' 'cup'
 'I broke the cup.'

(j) *Ki-kombe ki-li-vunja
 CL 7 SG-cup CL 7 SM-PAST-break
 'cup' 'broke'
 'The cup broke.'

Unfortunately, (j) is ungrammatical in Swahili because the inchoative alternate is not available for the verb *vunja* 'break'. This particular change of state verb, though prototypically unaccusative in other languages, is inherently transitive in Swahili. Although the verb *vunja* 'break' is unable to participate in the causative/inchoative alternation, its use in a sentence combined with a specific reduplicated noun offers evidence of resultativity on the object. Consider example (k):

(k) Mimi ni-li-vunja ki-kombe vi-pande vi-pande
 1st SG 1st SG SM-PAST-break CL 7 SG-cup CL 8 PL-piece CL 8 PL-piece
 'I' 'broke' 'cup' 'pieces' 'pieces'
 'I broke the cup into pieces.'

Example (k) is an active sentence that translates into English as ‘I broke the cup into pieces’. The use of the reduplicated noun *vipande vipande* ‘pieces, pieces’ is resultative on *kikombe* ‘cup’ the object of the sentence. Now consider the following example, which is a passivization of example (k) above.

- (l) Ki-kombe ki-li-vunjwa vi-pande vi-pande na mimi
 CL 7 SG-cup CL 7 SM-PAST-break-PASS CL 8 PL-piece CL 8 PL-piece by 1st SG
 ‘cup’ ‘was broken’ ‘pieces’ ‘pieces’ ‘by’ ‘me’
 ‘The cup was broken into pieces by me.’

The object of example (k) above now fills the subject position of the Passive sentence in (l) and the reduplicated noun remains in the VP and continues to be resultative on the D-Structure object now occupying the subject position at S-Structure. The resultativity of *vipande vipande* ‘pieces, pieces’ in (k-l) is not helpful if this type of resultativity cannot be found with an intransitive verb in Swahili.

However, examples (m-o) below evidence the use of the reduplicated noun with the intransitive verb *pasuka* ‘explode/burst/break apart’. In order to demonstrate that a variety of nouns can be used with both *pasuka* ‘explode/burst/break apart’ and the reduplicated noun *vipande vipande* ‘pieces, pieces’, three examples are given. The Swahili nouns *bomu* ‘bomb’ and *puto* ‘balloon’ are nouns which denote things that seem to have the inherent property of being able to explode. However, the noun *gilasi* ‘glass/tumbler’ seems to denote something with no such inherent property.

- (m) Bomu li-li-pasuka vi-pande vi-pande
 CL 5 SG bomb CL 5 SM-PAST-explode STAT CL 8 PL-piece CL 8 PL-piece
 ‘bomb’ ‘exploded/burst/broke apart’ ‘pieces’ ‘pieces’
 ‘The bomb exploded into pieces.’
- (n) Puto li-li-pasuka vi-pande vi-pande
 CL 5 SG balloon CL 5 SM-PAST-explode STAT CL 8 PL-piece CL 8 PL-piece
 ‘balloon’ ‘exploded/burst/broke apart’ ‘pieces’ ‘pieces’
 ‘The balloon burst into pieces.’

(o)	Gilasi	i-li-pasuka	vi-pande	vi-pande
	CL 9 SG glass	CL 9 SM-PAST-explode <u>STAT</u>	CL 8 PL-piece	CL 8 PL-piece
	‘glass/tumbler’	‘exploded/burst/broke apart’	‘pieces’	‘pieces’

‘The tumbler broke apart into pieces.’

This appears to be additional evidence for the existence of unaccusativity in Swahili. However, prior to making any claims about the nature of this find, it is necessary to attempt to find counter-evidence in the language, such as the occurrence of the reduplicated form modifying the subject of an active sentence with a transitive or unergative verb. As of this point in this research, no such counter-evidence has been found. However, in pursuance of counter-evidence or supporting evidence, a context is developed using verbs of the *kimbia* ‘run’ and *ogelea* ‘swim’ type, discussed earlier, in which a runner and a swimmer both made of clay run and swim extremely hard. This is used to investigate whether or not Swahili permits examples like (12-13):

(12) ‘Runner of clay ran pieces pieces.’

(13) ‘Swimmer of clay swam pieces pieces.’

If such examples are permitted, the reduplicated noun *vipande vipande* ‘pieces, pieces’ cannot be used as a diagnostic of unaccusativity in Swahili because such examples would suggest that *vipande vipande* ‘pieces, pieces’ can be resultative on the subjects of unergative verbs in this context. Consider the following Swahili examples resulting from the aforementioned context.

(p)	M-kimbia-ji	w-a	u-dongo	a-li-kimbia	mpaka
	CL 1 SG-run-AGT	CL 1-of	CL 11 SG-clay	CL 1 3 rd SG SM-PAST-run	until
	‘runner’	‘of’	‘clay’	‘ran’	‘until’
	a-ka-pasuka		vi-pande	vi-pande	
	CL 1 3 rd SG SM-CONN-explode <u>STAT</u>		CL 8 PL-piece	CL 8 PL-piece	
	‘he/she and thus exploded/burst/broke apart’		‘pieces’	‘pieces’	

‘The runner of clay ran until she exploded into pieces.’

(q) Mw-ogelea-ji	w-a	u-dongo	a-li-ogelea	mpaka
CL 1 SG-swim-AGT	CL 1-of	CL 11 SG-clay	CL 1 3 rd SG SM-PAST-run	until
‘swimmer’	‘of’	‘clay’	‘swim’	‘until’
a-ka-pasuka		vi-pande	vi-pande	
CL 1 3rd SG SM-CONN-explode	<u>STAT</u>	CL 8 PL-piece	CL 8 PL-piece	
‘he/she thus exploded/burst/broke apart’		‘pieces’	‘pieces’	
‘The swimmer of clay swam until he burst into pieces.’				

Obviously, *vipande vipande* ‘pieces, pieces’ can be used in sentences with the clay runner and swimmer. However, the structure of the examples (p-q) is altogether different from the simple structure of the examples (m-o). In the examples (p-q), both a matrix clause using the main verbs *kimbia* ‘run’ and *-ogelea* ‘swim’ and a subordinate clause using the verb *pasuka* ‘explode/burst/break apart’ in conjunction with the reduplicated noun *vipande vipande* ‘pieces, pieces’ are necessary to express the result of the given context. It is important to note that the reduplicated noun in (p-q) is resultative on the argument of the clause containing the verb *pasuka* ‘explode/burst/break apart’ and not on the argument of the clauses containing the verbs *ogelea* ‘swim’ and *kimbia* ‘run’.

Due to the absence of counter-evidence in these data, it is now possible to assert that the reduplicated noun *vipande vipande* ‘pieces, pieces’ is a diagnostic of unaccusativity in Swahili. Of course, it is necessary to delineate the set of intransitive verbs in Swahili that this reduplicated noun can be used with. Such a set would strengthen the argument for the use of this reduplicated form as one type of unaccusativity diagnostic for intransitive verbs in Swahili, since the existence of unaccusativity in Swahili is surely not defined solely within the parameters of the use of *vipande vipande* ‘pieces, pieces’ with an intransitive verb.¹⁷

¹⁷ Further research is needed to delineate the verbs in Swahili that would permit the resultativity of a noun phrase of the sort *vipande vipande* ‘pieces, pieces’ on the sole argument of an unaccusative verb.

3.3 Resultativity and *Kuwa* ‘to Be/Become’

In many languages, the verb *to be* or a form of the verb *to be* patterns with unaccusatives (Burzio 1986, Perlmutter 1989, Rosen 1981, among others). As discussed earlier, the verbal stative clause used in conjunction with certain Swahili verbs of the *wasili* ‘arrive’ and *toka* ‘emerge’ type demonstrates a form of resultativity that is not present when the verbal stative clause is used with verbs of the *kimbia* ‘run’ or *ogelea* ‘swim’ type. This difference evidences the existence of split-intransitivity in Swahili. The structure of the resultative-stative and stative clauses in examples (c-f) is of the type IP + IP.¹⁸ This section investigates the use of an infinitival clause with the Swahili infinitive *kuwa* ‘to be/become or being/becoming’ to further evidence split-intransitivity.

Verbs of change of state generally describe changes in an entity’s shape or appearance (Labelle 1992, B. Levin and Rappaport 1995). In English, the verbs *melt* and *freeze* are unaccusative verbs. Examples (14-15) demonstrate the use of the PPs *into a puddle of water* and *into ice* are resultative on the D-Structure objects *the ice* and *the puddle of water* respectively.

(14) The ice melted into a puddle of water.

(15) The puddle of water froze into ice.

Swahili does not have a preposition that is equivalent in meaning to the English preposition *into*. However, a Swahili speaker does have a structure that effectively expresses resultativity using the Swahili change-of-state verbs *yeyuka* ‘melt’ and *ganda* ‘freeze’. Consider the following examples.

(r) Barafu	i-li-yeyuka	ku-wa	bwawa	l-a	maji
CL 9-ice	CL 9 SM-PAST-melt	<u>STAT</u>	INF-be	CL 5 SG-puddle	CL 5-of CL 6 water
‘ice’	‘melted’	‘to be/become’	‘puddle’	‘of’	‘water’

‘The ice melted into a puddle of water.’

¹⁸ This distinction is being made to clearly mark the difference between the clauses used with *wasili* ‘arrive’ and *toka* ‘emerge’ type verbs, the resultative-stative, and the clauses used with *kimbia* ‘run’ and *ogelea* ‘swim’ type verbs, which are stative clauses that describe a particular state of being.

- (s) Bwawa l-a maji li-li-ganda ku-wa barafu
 CL 5 SG-puddle CL 5-of CL 6 water CL 5 SM-PAST-freeze INF-be CL 9-ice
 ‘puddle’ ‘of’ ‘water’ ‘froze’ ‘to be/become’ ‘ice’
 ‘The puddle of water froze into ice.’

The infinitival clause structure *kuwa* + NP expresses the change of state of the *barafu* ‘ice’ and the *bwawa la maji* ‘puddle of water’ resulting in the *bwawa la maji* ‘puddle of water’ in example (r) and the *barafu* ‘ice’ in (s). Clearly, this is a form of resultativity. As in the previous sections, in order to make any assertions about unaccusativity in Swahili, it is necessary to provide evidence supporting such assertions. Because, as discussed previously, the verbs *kimbia* ‘run’ and *ogelea* ‘swim’ are unergative, they are used in an attempt to provide evidence supporting the argument that the *kuwa* + NP structure can be used as a diagnostic of unaccusativity in Swahili. Consider:

- (t) M-tu a-li-kimbia a-ka-wa m-chofu
 CL 1 SG-person CL 1 3rd SG SM-PAST-run 3rd SG SM-CONN-be CL 1 SG-weary
 ‘person’ ‘ran’ ‘he/she and thus became’ ‘weary’
 ‘The person ran and became weary.’
- (u) M-tu a-li-ogelea a-ka-wa m-chofu
 CL 1 SG-person CL 1 3rd SG SM-PAST-swim 3rd SG SM-CONN-be CL 1 SG-weary
 ‘person’ ‘swam’ ‘he/she and thus became’ ‘weary’
 ‘The person swam and became weary.’

The Swahili examples (t-u), evidence an important difference in the realization of the Swahili verb *kuwa* ‘to be/become’ when used in conjunction with either of the two unergative Swahili verbs. The infinitival form is not able to be used with the unergative verbs; the verb *kuwa* ‘to be/become’ must be conjugated for the subject of the unergative verb. The fact that *mchofu* ‘weary’ is an adjective phrase (AP) instead of an NP is inconsequential to the findings because both types of phrases are resultative in examples (r-u). The fact that all four of the Swahili examples (r-u) demonstrate resultativity does not weaken the argument that the *kuwa* + NP structure can be used as a diagnostic of unaccusativity. In fact,

it strengthens it because it is not the presence of resultativity that is important in this case, but the fact that the resultativity in examples (r-s) is realized differently than its realization in the examples (t-u) where the unergative verbs are used in the main clause. The infinitive makes the *become*-clause in examples (r-s) dependent on the main clause, which establishes a link between their arguments so that *bwawa la maji* ‘puddle of water’ is resultative on *barafu iliyeyuka* ‘ice melted’ in (r) and *barafu* ‘ice’ is resultative on *bwawa la maji liliganda* ‘puddle of water froze’ in (s). The tensed *become*-clauses in examples (t-u) are independent of their main clause, so they do not express resultativity on the arguments of their main clause. Clearly, the fact of a difference between examples (r-s) versus examples (t-u) evidences split-intransitivity. However, because of the difference in linkage or clause dependence with finite versus infinitive subordinate clauses, the clause dependence in examples (r-s) are evidence of the unaccusativity of the Swahili verbs *yeyuka* ‘melt’ and *ganda* ‘freeze’.

One reader of previous versions of this research questioned whether or not the resultativity exhibited in (r-s) above was a consequence of the use of the verb *to be*. It is true that in examples such as (r-s), as well as (t-u), resultativity is realized through the use of the verb *to be*.¹⁹ However, it is also true that examples (c-f), restated below for ease of comparison as (v-y), use the verb *to be*, and only (v-w) are resultative, whereas (x-y) are not. As discussed in section 3.1, the tiredness of the travelers in (v) and the damage to the books in (w) is a result of an underlying process (i.e., traveling and being submerged in water respectively) not the arriving in example (v) or emerging in example (w). In examples (x-y), a native speaker understands that the tiredness of the people in (x-y) is not the result of some underlying process or the result of the running or swimming respectively.

(v) Wa-safiri	wa-li-wasili	wa-ki-wa
CL 2 PL-traveler	CL 2 3 rd PL SM-PAST-arrive	CL 2 3 rd PL SM-PROG-be
‘travelers’	‘arrived’	‘being’

¹⁹ Examples (t-u) were not included in the previously read work.

wa-me-choka

CL 2 PL SM-PERF-tired STAT

‘tired’

‘The travelers arrived tired.’

(w) Vi-tabu vi-li-toka maji-ni i-ki-wa

CL 8 PL-book CL 8 SM-PAST-come from STAT CL 6 water-LOC CL 8 SM-PROG-be

‘books’ ‘emerged’ ‘at water’ ‘being’

vi-me-haribika

CL 8 SM-PERF-damaged STAT

‘damaged’

‘The books emerged from the water damaged.’

(x) Wa-tu wa-li-kimbia wa-ki-wa

CL 2 PL-person CL 2 3rd PL SM-PAST-run CL 2 3rd PL SM-PROG-be

‘people’ ‘ran’ ‘being’

wa-me-choka

CL 2 3rd PL SM-PERF-tired STAT

‘tired’

‘The people ran tired.’

(y) Wa-tu wa-li-ogelea wa-ki-wa

CL 2 PL-person CL 2 3rd PL SM-PAST-swim CL 2 3rd PL SM-PROG-be CL 2

‘people’ ‘swam’ ‘being’

wa-me-choka

3rd PL SM-PERF-tired STAT

‘tired’

‘The people swam tired.’

These differences demonstrate the multiple factors that contribute to determining a verb's categorization as unaccusative or unergative. In the case of the verb *to be* in Swahili, it is how the verb *to be* is used, i.e. the structure of the clause in which it is contained, in combination with the verb being used in the matrix clause.

3.4 The Stative Affix -k-

The verbal stative affix -k- in Swahili morphologically derives stative intransitive verbs from, for the most part, transitive verbs and a few intransitive verbs. The following examples (z-ff) are Swahili verbs along with their stative intransitive counterparts.

(z) *tegua* 'to sprain' *teguka* 'be sprained'

(aa) *vuruga* 'to stir' *vurugika* 'be stirred up'

(bb) *haribu* 'to destroy; to spoil' *haribika* 'be spoilt; be broken down'

(cc) *bungua* 'to bore holes in wood, grain, etc.' *bunguka* 'be worm-eaten'

(dd) *angua* 'to throw down' *anguka* 'to fall; be derailed'

(ee) *osha* 'to wash' *osheka* 'be washable'

(ff) *kaa* 'to sit; to stay; to live; to inhabit; to dwell' *kalika* 'be seated; be inhabitable'

According to Seidl and Dimitriadis (2003) the Swahili stative -k- can only be affixed to unergative intransitive verbs as evidenced by the ungrammatical examples (gg-ii).²⁰

(gg) *(ku)wa* 'to be' **w-ik-a*

(hh) *(ku)ja* 'to come' **j-ik-a*

(ii) *fika* 'to arrive' **fik-ik-a*

Mchombo (1993) suggests that although the stative verb forms should clearly be studied as part of the phenomenon of unaccusativity, it should be noted that Swahili stative verbs are derived from

²⁰ It is interesting that Seidl and Dimitriadis make statements regarding the unaccusativity and unergativity of Swahili verbs. It seems that these assertions are based on the tendency of these particular verbs to be classified as prototypical unaccusative verbs in other languages; however, as discussed in Chapter 1 of this research, the English verb *come* does not pattern as unaccusative in all languages (Rosen 1984). At the present time, the only research that delves into split-intransitivity in Swahili is the current one.

transitive verb forms and seem to pattern as unaccusative due to this morphological process. Because many unaccusative verbs are unaccusative in their underived form, Swahili stative verbs need to be considered in terms of how this morphological process captures the various aspects of the unaccusative construction.

To summarize, split-intransitivity has been evidenced by the use of a verbal stative clause, the use of the reduplicated noun *vipande vipande* ‘pieces, pieces’, the use of the infinitival clause *kuwa* + NP, and derived stative verb forms.

There is still much work to be done to delineate the full set, or at least a large portion, of unaccusative and unergative verbs in Swahili. Obviously, the importance of the Swahili stative verbal affix *-k-* cannot be dismissed in any discussion regarding the realization of unaccusativity in Swahili in the future.

CHAPTER 4: SWAHILI AND HITTITE FROM AN OPTIMALITY-THEORETICAL PERSPECTIVE

4.1 Introduction

The purpose of this chapter is to examine split-intransitivity in Swahili and Hittite from an optimality-theoretical perspective. The discussion in the following section is an exposition of the process of formulating violable constraints and their ranking according to the language under consideration. This discussion does not follow a strict, logical order of the topics. It is a discovery procedure using Optimality Theory that verifies that, indeed, as claimed in the literature, there is only one constraint that ultimately separates unaccusatives from unergatives in Hittite. A similar procedure is used to verify the findings of the Swahili research in Chapter 3.

Section 4.3 examines Swahili and Optimality Theory. Section 4.4 discusses the use of Optimality Theory as a theoretical framework for Hittite and the benefit of attempting to rank violable constraints in a language that has one constraint that clearly separates unaccusative verbs from unergative ones. Section 4.5 asks and attempts to answer some of the questions that were not answered in the analyses of Swahili and Hittite from an optimality-theoretical perspective.

4.2 The Formulation of Constraints and Rankings

The not comprehensive list of items for the formulation of violable constraints included all of the usual suspects, e.g., agency, telicity, change of state, change of location, instigation, inter alia. In contemplation of placing the violable constraints in a tableau in the order distinctive of a given language, one must figure out the weight or rank given to each constraint. One way of beginning this process is to list all of the unaccusative and unergative verbs in a spreadsheet and consider each verb individually according to each aspect of unaccusativity. For example, in Hittite, the verb *ḫark* ‘perish’ is a very typical unaccusative verb. In considering this verb one can ask yes/no questions (e.g., *Is it telic? Does the subject exhibit agent-like properties? Is the subject in control of the action? Is the action instigated by the subject?*). The same exercise can be done considering each of the other verbs in the set

of Hittite intransitive verbs. When one is finished, there will be a split demonstrated in each of the columns. For example, in the telicity column, there will be a clear split demonstrated between the verbs with *yes* for an answer and another set with *no* for an answer. This evaluation process is continued for each of the columns listed. These splits do not necessarily demonstrate a clear split between unaccusative- and unergative-type verbs; however, one does begin to get a sense of which factors are given more weight in the language under consideration depending upon how the split in a particular category compares with the split of unaccusative and unergative verbs in the language. Table 4.1 shows an example of this with some Hittite verbs.

As discussed in section 1.5.3, it is claimed (Garrett 1996) that Hittite intransitive verbs that attest with subject clitics are unaccusative, while those that never attest with subject clitics are unergative. The truth of this claim can be tested by drawing up an Optimality Theory tableau with all known constraints in order to verify this. In Table 4.1, the split between unergative- and unaccusative-type verbs is demonstrated in the subject clitic column. However, notice that the split of the intransitive verbs across categories does not coincide with the split in the subject clitic column. In considering the Agent column, it is worth noting that agent-like properties are not sufficient in the determination of a Hittite intransitive verb as unergative. Notice that all the verbs that are claimed to be unergative because they have a *no* in the subject clitic column take subjects that exhibit agent-like properties. However, some of the verbs that are claimed to be unaccusative because they have a *yes* in the subject clitic column also take subjects that exhibit agent-like properties. This suggests that although agentivity is a strong determinant of the classification of Hittite verbs as unergative or unaccusative, there is another factor that supersedes agentivity. Notice that in the change-of-location column, verbs that have subjects that come to be in a different location, regardless of agentivity, pattern as unaccusative. Thus, change of location is a more important determinant of unergative or unaccusative classification.

It is important to remember that this is not the set of constraint rankings for the tableau of Hittite intransitive verbs; this is merely one way of going about the work of identifying the split for each facet of unaccusativity under consideration for the formulation and ranking of the violable constraints.

Recall that the central problem of split-intransitivity discussed in section 1.1 is that there is a relatively small number of properties that split the set of intransitive verbs into two subsets, but the properties do not all split them into the same two subsets. Therefore, the researcher must work out for each language, in this case Hittite, which property or properties to prioritize in making that split. Consider the splits listed in the columns of each property in Table 4.1. There is no directly available answer for where these splits suggest the unaccusative or unergative split should lie because the properties of the Hittite intransitive verbs do not line up with a *yes* and a *no* in the same columns for almost all the properties. If they did, the split would emerge directly from the pattern of facts.

Based on the exposition of Garrett (1996) in section 1.5.3, the cumulative effect of the “unaccusative” feel of the Hittite intransitive verbs that attest with subject clitics is sufficient, at least in a preliminary way, to draw an inference to the best explanation for the data in Table 4.1.

After considering the interaction of the splits among the categories, one is able to hypothesize the distinct ranking for the specific language. Primacy is given to a subject clitic constraint based on the Hittite examples from section 1.5.3. Clearly, even with a subject clitic constraint ranked highest, the possible number of rankings of the remaining six properties is factorial (i.e., $6 \times 5 \times 4 \times 3 \times 1$). One such language ranking under consideration for Hittite is shown below in example (1). The rationale for considering this particular ranking comes from section 1.5.3.3. Recall that Garrett (1996) suggests that the lone argument of Hittite unaccusative verbs is, or comes to be, in a definite state or location. Also remember the discussion from this section of agentivity and change of location that concluded, based on the data in Table 4.1, that change of location is a more important determinant of unaccusative or unergative classification than agentivity.

- (1) subject clitic >> change of location >> change of state >> agency >> telicity >> instigation >>
transitive counterpart²¹

²¹ The term *transitive counterpart* is a term used generically here for the Hittite decausatives and detransitives as well as the transitive verbs in Swahili that take the stative *-k-* affix, of which many have transitive counterparts.

Table 4.1: Splits by Category for some Hittite Intransitive Verbs




Verb	Translation	Subject Clitic (yes/no)	Telic (yes/no)	Change of Location (yes/no)	Change of State (yes/no)	Agent (yes/no)
<i>tuḫṣiya-</i>	wait (for)	no	no	no	no	yes
<i>kuen-</i>	kill	no	yes	no	no	yes
<i>wak-</i>	bite	no	yes	no	no	yes
<i>walḫ-</i>	strike, attack	no	no	no	no	yes
<i>zaḫḫāi-</i>	fight (with)	no	no	no	no	yes
<i>mald-</i>	recite/vow	no	no	no	no	yes
<i>ḫuek-</i>	cast a spell	no	yes	no	no	yes
<i>wašta-</i>	commit an offense	no	yes	no	no	yes
<i>ḫatrāi-</i>	write	no	no	no	no	yes
<i>ḫuwāi-</i>	run	yes	no	yes	no	yes
<i>iya-</i>	walk	yes	no	yes	no	yes
<i>parš-</i>	flee	yes	no	yes	no	yes
<i>piddāi-</i>	flee	yes	no	yes	no	yes
<i>nink-</i>	get drunk	yes	yes	no	yes	no
<i>šalliya-</i>	melt	yes	yes	no	yes	no
<i>iyannāi-</i>	start walking/set out	yes	yes	yes	no	yes
<i>dudduwar-ešš</i>	become lame	yes	yes	no	yes	no
<i>zeya-</i>	be cooked	yes	yes	no	yes	no
<i>GEME-r-ešš</i>	become unfree	yes	yes	no	yes	no
<i>ḫuršakniya-</i>	burst	yes	yes	no	yes	no
<i>ḫark-</i>	perish	yes	yes	no	yes	no
<i>irmaliya-</i>	get sick	yes	yes	no	yes	no

4.2.1 Formally Stating Violable Constraints

It is not enough to evaluate the set of intransitives; one must decide how to formally state the violable constraints to be ranked. In the tableau, each column is headed with a different constraint symbol or abbreviation and each heading is linked to a formally stated constraint. The constraints need to be worded in such a way that violation is possible. In this way, the candidate either satisfies or violates the constraint. The constraints in this case are worded to point in one direction (i.e., toward unergative qualities or toward unaccusative qualities); however, one would arrive at the same conclusion from either direction. Consider the following list of constraints for Hittite, which point toward unaccusative qualities, and the tableau in Table 4.2:

- I. Subject Clitic Constraint: use a subject clitic with unemphatic 3rd person subjects
- II. Change of Location Constraint: the argument of the verb may come to be in a different location
- III. Change of State Constraint: the argument of the verb may come to be in a different state
- IV. Agency Constraint: the argument of the verb should exhibit patient-like properties
- V. Telicity Constraint: be telic
- VI. Instigation Constraint: the argument of the verb should externally instigate the action of the verb
- VII. Transitive Counterpart: the subject of the intransitive verb should correspond notionally to the object of its transitive counterpart

Table 4.2: Preliminary Tableau of Hittite Intransitive Verbs

<i>ḫuwāi</i> - ‘run’	Subject Clitic	Change of Location	Change of State	Agency	Telicity	Instigation	Transitive Counterpart
 unaccusative				*	*	*	
unergative	*!			*	*	*	
<i>arkuwāi</i> - ‘plead’	Subject Clitic	Change of Location	Change of State	Agency	Telicity	Instigation	Transitive Counterpart
 unaccusative	*						
 unergative	*						

- I. Subject Clitic Constraint: use a subject clitic with unemphatic 3rd person subjects
- II. Change of Location Constraint: the argument of the verb may come to be in a different location
- III. Change of State Constraint: the argument of the verb may come to be in a different state
- IV. Agency Constraint: the argument of the verb should exhibit patient-like properties
- V. Telicity Constraint: be telic
- VI. Instigation Constraint: the argument of the verb should externally instigate the action of the verb
- VII. Transitive Counterpart Constraint: the subject of the intransitive verb should correspond notionally to the object of its transitive counterpart

Table 4.2 shows a very preliminary tableau created for two Hittite verbs: *ḫuwāi* ‘run’ and *arkuwāi*- ‘plead’. A couple of problems come to light. This representation results in the correct categorization of only the unaccusative verb *ḫuwāi* ‘run’. The EVAL function selects both candidates as optimal for the unergative verb *arkuwāi*- ‘plead’. This occurs due to the wording of the Subject Clitic constraint *use a subject clitic with unemphatic 3rd person subjects*, which makes it possible for EVAL to correctly select the optimal candidate for unaccusative verbs because subject clitics only appear with unaccusative verbs in Hittite (Garrett, 1996). In other words, the Subject Clitic constraint can never be satisfied by an unergative verb. Also, notice that when a constraint is violated, it is violated by both

candidates (i.e., the unaccusative and unergative candidates). For example, if the verb is telic, it is telic whether or not it patterns as unaccusative or unergative in the language. Furthermore, in the case of Hittite, the only crucially ranked constraint is the Subject Clitic constraint, which means the lines separating all of the columns ranked lower than the Subject Clitic column are dotted lines because those constraints are not ranked with respect to one another. This is problematic because many languages do not have one particular feature that clearly separates unaccusative verbs from unergative verbs, so one is unable to properly evaluate the framework for use crosslinguistically based on the satisfaction or violation of a single constraint.

Recall from section 4.1 that this discussion does not follow a strict, logical order of the topics. It is discovery procedure that uses Optimality Theory to verify findings in the literature, which is why the discussion now shifts from Hittite to Swahili.

In an attempt to resolve these issues, a preliminary tableau was created for a few Swahili verbs. Swahili was chosen in this case because there is no single feature that clearly splits the Swahili intransitive verbs into unaccusative- and unergative-type verbs. The constraints under consideration for the Swahili intransitive verbs were then reformulated using indicative conditionals (i.e., if A, B).²² The ranking of the constraints below is based on the discussion of the Swahili data to follow in section 4.3. This section is meant to solidify the wording of the constraints. Consider the following list of constraints for Swahili and Table 4.3:







- I. If the subject of V_i corresponds notionally to the object of its transitive counterpart, then V_i is unaccusative.²³
- II. If V_i takes a patient/theme subject, then V_i is unaccusative.

²² If Optimality theory is to be used as a universal theory of split-intransitivity, the same constraints would be used for all languages and the variation in the realization of split-intransitivity across languages would come from the language specific ranking of the universal constraints. For example, the subject-clitic constraint would also be part of the violable constraint rankings of Swahili; however, since Swahili does not use clitic subjects in this way, this constraint would be ranked very low. Listing the subject-clitic constraint among the constraints being considered for this Swahili research would add very little to the discussion.

²³ V_i = intransitive verb

- III. If the subject of V_i is externally instigated, then V_i is unaccusative.
- IV. If the subject of V_i is affected, then V_i is unaccusative.
- V. If the subject of V_i undergoes a change of state, then V_i is unaccusative.
- VI. If V_i is telic, then V_i is unaccusative.

Table 4.3: Preliminary Tableau of Swahili Intransitive Verbs







<i>ganda</i> ‘freeze’	I	II	III	IV	V	VI	I. If the subject of V_i corresponds notionally to the object of its transitive counterpart, then V_i is unaccusative. II. If V_i takes a patient/theme subject, then V_i is unaccusative. III. If the subject of V_i is externally instigated, then V_i is unaccusative. IV. If the subject of V_i is affected, then V_i is unaccusative. V. If the subject of V_i undergoes a change of state, then V_i is unaccusative. VI. If V_i is telic, then V_i is unaccusative.
 unaccusative							
unergative	*!	*	*	*	*	*	
<i>yeyuka</i> ‘melt’	I	II	III	IV	V	VI	
 unaccusative							
unergative	*!	*	*	*	*	*	
<i>ogelea</i> ‘swim’	I	II	III	IV	V	VI	
 unaccusative							
 unergative							
<i>kimbia</i> ‘run’	I	II	III	IV	V	VI	
 unaccusative							
 unergative							

Listing the constraints thus resolves the issue of the same constraint being violated by both candidates in the tableau. However, another issue arises as seen in Table 4.3. The correct candidate is chosen in the case of the unaccusative verbs in the tableau. However, both candidates can be selected in the case of the unergative Swahili verbs *ogelea* ‘swim’ and *kimbia* ‘run’ since the conditions set forth in the if-clauses are not present and, therefore, cannot be checked, both candidates vacuously satisfy all of the violable constraints.

Although stating the constraints as indicative conditionals produced the desired effect of only violating a particular constraint for one of the candidates instead of both candidates, it also resulted in the unintended effect of eliminating the possibility of correctly selecting an unergative-type verb. However, if these constraints as stated are intended to detect unaccusative-type verbs, then an essentially parallel ranking of constraints could be formulated to detect unergative-type verbs. Consider the following list of constraints and the tableau in Table 4.4:

- I. If the subject of V_i corresponds notionally to the subject of its transitive counterpart, then V_i is unergative.
- II. If V_i takes an agentive subject, then V_i is unergative.
- III. If the subject of V_i is internally instigated, then V_i is unergative.
- IV. If the subject of V_i is not affected, then V_i is unergative.
- V. If the subject of V_i does not undergo a change of state, then V_i is unergative.
- VI. If V_i is atelic, then V_i is unergative.





Table 4.4: Preliminary Swahili Tableau to Detect Unergative-Type Verbs

<i>ganda</i> ‘freeze’	I	II	III	IV	V	VI
 unaccusative						
 unergative						
<i>yeyuka</i> ‘melt’	I	II	III	IV	V	VI
 unaccusative						
 unergative						
<i>ogelea</i> ‘swim’	I	II	III	IV	V	VI
unaccusative	*!	*	*	*	*	*
 unergative						
<i>kimbia</i> ‘run’	I	II	III	IV	V	VI
unaccusative	*!	*	*	*	*	*
 unergative						

After examining the same set of verbs in both tableaux, all verbs were correctly classified as either unaccusative (Table 4.3) or unergative (Table 4.4). Clearly, a more comprehensive list of Swahili intransitive verbs needs to be examined to evaluate the use of OT. However, in lieu of examining the verbs using both tableaux, the process could be somewhat simplified by creating a tableau that lists the violable constraints found in both Tables 4.3 and 4.4 according to their ranking. The set of constraints (i.e., I, II, III...) from the tableaux of unergative- and unaccusative-type verbs are co-listed without ranking them with respect to one another within a single column (i.e., separating them with dotted lines). Additionally, to avoid the primacy one might associate with subscript ordinal numbers or letters, the

subscripted letters *UA* (unaccusative) and *UE* (unergative) are used to identify the corresponding Roman numeral as belonging to the violable constraints of the unaccusative- or unergative-type verb respectively. As seen in Table 4.5, with the tableau set up this way, the four Swahili intransitive verbs were correctly classified as either unaccusative or unergative.

Table 4.5: Preliminary Swahili Tableau to Detect Unaccusative- and Unergative-Type Verbs

	I _{UA}	I _{UE}	II _{UA}	II _{UE}	III _{UA}	III _{UE}	IV _{UA}	IV _{UE}	V _{UA}	V _{UE}	VI _{UA}	VI _{UE}
<i>ganda</i> 'freeze'												
 unaccusative												
unergative	*!		*		*		*		*		*	
<i>yeyuka</i> 'melt'												
 unaccusative												
unergative	*!		*		*		*		*		*	
<i>ogelea</i> 'swim'												
unaccusative		*!		*		*		*		*		*
 unergative												
<i>kimbia</i> 'run'												
unaccusative		*!		*		*		*		*		*
 unergative												

I. If the subject of V_i corresponds notionally to the object of its transitive counterpart, then V_i is unaccusative.
II. If V_i takes a patient/theme subject, then V_i is unaccusative.
III. If the subject of V_i is externally instigated, then V_i is unaccusative.
IV. If the subject of V_i is affected, then V_i is unaccusative.
V. If the subject of V_i undergoes a change of state, then V_i is unaccusative.
VI. If V_i is telic, then V_i is unaccusative.

I. If the subject of V_i corresponds notionally to the subject of its transitive counterpart, then V_i is unergative.
II. If V_i takes an agentive subject, then V_i is unergative.
III. If the subject of V_i is internally instigated, then V_i is unergative.
IV. If the subject of V_i is not affected, then V_i is unergative.
V. If the subject of V_i does not undergo a change of state, then V_i is unergative.
VI. If V_i is atelic, then V_i is unergative.

4.3 Swahili and Optimality Theory

In order to attempt to suggest a ranking for the Swahili split-intransitivity data, a similar method to that discussed for Hittite in section 4.2 and shown in Table 4.1 was used. Table 4.6 shows a sample of one of the spreadsheets used to evaluate the Swahili intransitive verbs with respect to different aspects of unaccusativity. The splits within each column do not necessarily distinguish unaccusative verbs from unergative verbs; however, each column demonstrates the split of Swahili intransitive verbs according to the aspect of unaccusativity under consideration in that particular column.

Notice that none of the splits line up the same across all properties in Table 4.6; however, this just means that an inference needs to be drawn to the best explanation. The following will leave the Transitive Counterpart column out of the discussion for the time being. Notice that the three Swahili verbs *kimbia* ‘run’, *ogelea* ‘swim’, and *soma* ‘read’ share the same properties as evidenced by the ‘no’ in each column. Also notice that the five Swahili verbs *chemka* ‘boil’, *choka* ‘(be) tired’, *ganda* ‘freeze’, *lewa* ‘(be) drunk’, and *yeyuka* ‘melt’ share the same properties as evidenced by the ‘yes’ in each column. These data suggest that one of these small sets of Swahili verbs is unergative and the other is unaccusative. Since the Swahili research in Chapter 3 demonstrates that *kimbia* ‘run’ and *ogelea* ‘swim’ pattern as unergatives and *choka* ‘(be) tired’, *ganda* ‘freeze’, and *yeyuka* ‘melt’ pattern as unaccusatives, it seems that there is no risk in making the determination based on the corroborative evidence that the set of three Swahili verbs with ‘no’ in each column and the set of five verbs with ‘yes’ in each column are unergative and unaccusative respectively. Despite the definitive determination for those two small sets of Swahili intransitive verbs, there is still no determination that can be made regarding a ranking for the constraints.

If, according to the research in Chapter 3, one accepts the assertion that *wasili* ‘arrive’-type verbs pattern as unaccusative verbs, then one can compare the pattern of the yes/no answers for the *wasili* ‘arrive’-type verbs to the pattern of the small set of unaccusative verbs and begin to hypothesize about the ranking of certain properties. The data show that *wasili* ‘arrive’, *fika* ‘arrive’, and *eleweka* ‘(be) understandable’ pattern the same. In other words, these Swahili verbs have the answer ‘yes’ for agentivity (i.e., Patient), telicity, and external instigation but the answer ‘no’ for the properties of affectedness and change of state. Knowing that this is the pattern for the two arrive-type verbs in this data set and that they pattern as unaccusative verbs, it is assumed that *eleweka* ‘(be) understandable’ also patterns as unaccusative. Now, if one conjectures a ranking that places either affectedness or change of state as the highest ranking constraint, then verbs that pattern the same as the Swahili arrive-type verbs will violate the highest constraint. Therefore, we can suggest a ranking that does not have either

affectedness or change of state ranked highest. That does not provide a ranking, but it is a step in the right direction.

Table 4.6: Splits by Category for some Swahili Intransitive Verbs

Verb	Translation	Patient (yes/no)	Telic (yes/no)	Affected (yes/no)	Change of State (yes/no)	Trans Counterpart Object/Subj	External Instigation (yes/no)
<i>chemka</i>	boil	yes	yes	yes	yes	object	yes
<i>choka</i>	(be) tired	yes	yes	yes	yes	object	yes
<i>eleweka</i>	(be) understandable	yes	yes	no	no	object	yes
<i>fia</i>	die	yes	yes	yes	yes	n/a	no
<i>fika</i>	arrive	yes	yes	no	no	n/a	yes
<i>ganda</i>	freeze	yes	yes	yes	yes	object	yes
<i>lewa</i>	(be) drunk	yes	yes	yes	yes	n/a	yes
<i>sikitika</i>	(be) sorry/grieve	yes	yes	yes	yes	object	no
<i>someka</i>	(be) readable	yes	no	no	no	object	yes
<i>tapika</i>	to vomit	yes	yes	yes	no	n/a	no
<i>tetemeka</i>	shake/tremble/shiver	yes	no	yes	yes	n/a	no
<i>wasili</i>	arrive	yes	yes	no	no	n/a	yes
<i>yeyuka</i>	melt	yes	yes	yes	yes	object	yes
<i>kaa</i>	sit	no	yes	yes	no	subject	no
<i>kimbia</i>	run	no	no	no	no	n/a	no
<i>ogelea</i>	swim	no	no	no	no	n/a	no
<i>soma</i>	read	no	no	no	no	subject	no

For the sake of argument, because the derived stative-intransitive form *someka* ‘(be) readable’ exhibits a pattern that differs from its root verb form (i.e., *soma* ‘read’) it is assumed that the derived verb form (i.e., *someka* ‘[be] readable’) is unaccusative since *soma* ‘read’ is unergative. If this is true, then telicity cannot be ranked highest because a verb that patterns the same as *someka* ‘(be) readable’ would violate a constraint on telicity.

Based on the patterns exhibited in Table 4.6 and considering the assertion that Swahili verbs that pattern the same as *wasili* ‘arrive’ and *someka* ‘(be) readable’ will pattern as unaccusative, it can be stated that telicity, nor agentivity, nor change of state can be the highest ranked constraint for Swahili. Furthermore, any ranking of the constraint set that has those three constraints ranked in any order in the

three highest positions would cause fatal violations for verbs that pattern the same as *someka* ‘(be) readable’.

The ranking in (2) is conjectured for the Swahili intransitive verb set. Without more information to support the position of the constraints, one can only assert at this time that one of the constraints on agentivity, instigation, or a transitive counterpart must be ranked highest because there is evidence against any of the other three constraints being listed higher than the fourth position in the ranking.











(2) transitive counterpart >> agency >> instigation >> affectedness >> change of state >> telicity

If the conjectured ranking is correct, the tableau in Table 4.7 shows which candidate the EVAL mechanism selects as the optimal one.

Notice that the selected candidate also has a superscripted number directly following it. This demonstrates the relative strength of the unaccusative- or unergative-type verb. For example, the Swahili verb *yeyuka* ‘melt’ has a superscripted six. This means that this verb satisfied six ranked constraints that detect unaccusative intransitive verbs; therefore, this is a strong unaccusative verb or a very “unaccusative” unaccusative verb. Likewise, the Swahili verb *kimbia* ‘run’ satisfied six ranked constraints of the set that detects unergative intransitive verbs demonstrating that *kimbia* ‘run’ is a very “unergative” unergative verb.²⁴ It is also worth noting that many of the verbs are of the very unergative or very unaccusative type. That is probably directly related to the amount of data. This is because the extremes of both types of intransitive verbs are more likely to stand out, whereas the intransitive verbs that fall somewhere in the middle of the two types are more difficult to determine.

²⁴ It is true that Optimality Theory does not involve the actual counting of violations because the constraints are set up in a strict dominance hierarchy; however, this number was meant to coincide with some of the literature on the Unaccusative Hypothesis regarding a continuum (i.e., hierarchy) of sorts in the set of unaccusative-type or unergative-type verbs in a language (Sorace 2000; Legendre and Sorace 2003; and Nakipoğlu 1998).

Table 4.7: Swahili Tableau to Detect Unaccusative- and Unergative-Type Verbs

	I _{UA}	I _{UE}	II _{UA}	II _{UE}	III _{UA}	III _{UE}	IV _{UA}	IV _{UE}	V _{UA}	V _{UE}	VI _{UA}	VI _{UE}
<i>yeyuka</i> 'melt'												
 unaccusative ⁶												
unergative	*!		*		*		*		*		*	
<i>ogelea</i> 'swim'												
unaccusative		*!		*		*		*		*		*
 unergative ⁶												
<i>tikisika</i> 'be shaky'/'be unsteady'												
 unaccusative ⁴										*		*
unergative	*!		*		*		*					
<i>kimbia</i> 'run'												
unaccusative		*!		*		*		*		*		*
 unergative ⁶												
<i>wasili</i> 'arrive'												
 unaccusative ⁴								*				
unergative			*!		*				*		*	
<i>soma</i> 'read'/'study'												
unaccusative		*!		*		*		*		*		*
 unergative ⁶												
<i>someka</i> '(be) readable'												
 unaccusative ³								*		*		*
unergative	*!		*		*							
<i>lewa</i> '(be) drunk'												
 unaccusative ³						*						*
unergative			*!				*		*			
<i>chemka</i> 'boil'												
 unaccusative ⁵												*
unergative	*!		*		*		*		*			
<i>tetemeka</i> 'shake'/'tremble'/'shiver'												
 unaccusative ⁴										*		*
unergative	*!		*		*		*					

- I.** If the subject of V_i corresponds notionally to the object of its transitive counterpart, then V_i is unaccusative.
II. If V_i takes a patient/theme subject, then V_i is unaccusative.
III. If the subject of V_i is externally instigated, then V_i is unaccusative.
IV. If the subject of V_i is affected, then V_i is unaccusative.
V. If the subject of V_i undergoes a change of state, then V_i is unaccusative.
VI. If V_i is telic, then V_i is unaccusative.

- I.** If the subject of V_i corresponds notionally to the subject of its transitive counterpart, then V_i is unergative.
II. If V_i takes an agentive subject, then V_i is unergative.
III. If the subject of V_i is internally instigated, then V_i is unergative.
IV. If the subject of V_i is not affected, then V_i is unergative.
V. If the subject of V_i does not undergo a change of state, then V_i is unergative.
VI. If V_i is atelic, then V_i is unergative.

4.4 Hittite and Optimality Theory

One difficulty encountered while trying to rank violable constraints $\Pi_{UA/UE}$ through $V\Pi_{UA/UE}$ for Hittite is the fact that the subject-clitic constraint determines a verb's categorization as either unaccusative or unergative. This means that even if the other constraints are not ranked properly, the subject-clitic constraint will identify the correct candidate regardless. After some trial and error it became a lesson in futility to attempt to rank constraints as if the subject clitic constraint were not there as a failsafe.

One may ask why someone would attempt to rank the constraints for any language that has a particular violable constraint that clearly splits the set of intransitive verbs into unaccusative- and unergative-type verbs. It has not yet been determined whether such ordering would be necessary for a language that continues to have native speakers in the present day; however, ranking the violable constraints in the tableau may be useful for a language like Hittite because there is a finite set of available language data.²⁵ For example, let us say that an intransitive verb is attested in Hittite without a subject clitic and it is not found in a non-emphatic 3rd person singular environment. Since there is no attested environment where the appearance or lack of a 3rd person subject clitic would clearly determine the categorization of the intransitive verb, the I_{UA}/I_{UE} constraint cannot be checked. This means that the constraint is vacuously satisfied; therefore, the ordering of constraints Π_{UA}/Π_{UE} - VI_{UA}/VI_{UE} becomes important because the already established patterns of attested verbs would offer important clues that would suggest the most probable classification of the verb. Additionally, examining the data from an optimality-theoretical perspective provided an investigative tool for evaluating, and ultimately, verifying the claims in the literature.











Table 4.8 illustrates the analysis of some Hittite intransitive verbs. It is worth noting that some of the constraints differ from the ones in the Swahili tableau. This is not to say that the different constraint

²⁵ It is assumed that a tableau for languages with present day speakers and a single crucially-ranked constraint would be set up with the crucially-ranked constraint in the highest position in the tableau and all the other constraints would be ranked lower and without respect to one another.

rankings that seem to be optimal for Hittite are not part of the constraint hierarchy of Swahili. This simply demonstrates crosslinguistic variance. A universal constraint such as the I_{UA}/I_{UE} in the Hittite tableau would not add anything of substance to this work if it were included in the Swahili tableau since it would be ranked somewhere on the extreme low end of the complete universal hierarchy when optimized for Swahili intransitive verbs.²⁶ Also notice that since the only crucially ranked constraint is the Subject Clitic constraint (i.e., I_{UA}/I_{UE}). None of the other constraints are ranked with respect to one another. In order to make the tableau readable, I kept the $_{UA}/_{UE}$ constraint pairs together but separated with dotted lines and used a darker dotted line between the pairs of constraints.

²⁶ Adhering to the strictest sense of the term *universal constraint hierarchy*, every possible unaccusative or unergative constraint on well-formedness would be a part of the constraint hierarchy of every language that demonstrates split-intransitivity.

Table 4.8: Hittite Tableau to Detect Unaccusative- and Unergative-Type Verbs

	I _{UA}	I _{UE}	II _{UA}	II _{UE}	III _{UA}	III _{UE}	IV _{UA}	IV _{UE}	V _{UA}	V _{UE}	VI _{UA}	VI _{UE}	VII _{UA}	VII _{UE}
<i>ḫuwāi</i> 'run'														
 unaccusative ³								*		*		*		*
unergative	*!				*									
<i>iya</i> 'walk'														
 unaccusative ³								*		*		*		*
unergative	*!				*									
<i>piddāi</i> 'flee'														
 unaccusative ³								*		*		*		*
unergative	*!				*									
<i>išiyahḫ</i> 'be revealed'														
 unaccusative ⁶						*								
unergative	*!		*				*		*		*		*	
<i>zahḫ</i> 'be struck'														
 unaccusative ⁵						*				*				
unergative	*!		*				*				*		*	
<i>wašta</i> 'commit an offense'														
unaccusative		*!				*		*		*		*		
 unergative ⁶													*	
<i>allapahḫ</i> 'spit (on)'														
unaccusative		*!		*		*		*		*		*		*
 unergative ⁷														
<i>kuen-</i> 'kill'														
unaccusative		*!		*		*		*		*		*		
 unergative ⁶													*	
<i>mema</i> 'speak'														
unaccusative		*!		*		*		*		*		*		*
 unergative ⁷														
<i>šipant</i> 'libate'														
unaccusative		*!		*		*		*		*		*		*
 unergative ⁷														

I. If the V_i attests with a clitic subject, then V_i is unaccusative.
II. If the subject of V_i corresponds notionally to the object of its transitive counterpart, then V_i is unaccusative.
III. If the subject of V_i undergoes a change of location, then V_i is unaccusative.
IV. If V_i takes a patient/theme subject, then V_i is unaccusative.
V. If the subject of V_i undergoes a change of state, then V_i is unaccusative.
VI. If the subject of V_i is externally instigated, then V_i is unaccusative.
VII. If V_i is telic, then V_i is unaccusative.

I. If the V_i does not attest with a clitic subject, then V_i is unergative.
II. If the subject of V_i corresponds notionally to the subject of its transitive counterpart, then V_i is unergative.
III. If the subject of V_i does not undergo a change of location, then V_i is unergative.
IV. If V_i takes an agentive subject, then V_i is unergative.
V. If the subject of V_i does not undergo a change of state, then V_i is unergative.
VI. If the subject of V_i is internally instigated, then V_i is unergative.
VII. If V_i is atelic, then V_i is unergative.

4.5 Unanswered Questions

Several questions have arisen during this research involving the use of Optimality Theory as theoretical framework for unaccusativity. Each of the following questions will be discussed in turn.

- A. Would the language specific constraint hierarchy rankings selected by the Swahili language change with more research into the phenomenon of unaccusativity in Swahili?
- B. How would this optimality-theoretical perspective account for variable behavior verbs within languages?
- C. How could the idea of partial constraint ranking (i.e., a floating constraint) benefit the optimality-theoretical perspective of the phenomenon of unaccusativity?

It is very possible, if not likely, that the constraint hierarchy selected by the Swahili language would change with further research to delineate the full sets of unaccusative and unergative verbs in the language. The research into split-intransitivity is lacking in depth and breadth and for that reason the research done here is only an examination and discussion using the data available at this time. The research into split-intransitivity in Swahili is a very slow and painstaking process, but when this research began there was no research base for unaccusativity in Swahili.

Using truth conditionals to configure pairs of constraints that are not ranked with regard to one another makes it possible to conceive of violable constraints that would account for variable behavior verbs. For example, let us return to the discussion from Chapter 1 regarding the variable behavior of English verbs of the *roll*-type. Remember that the semantic factor that determines the syntactic behavior of these verbs is animacy, so a violable constraint pair could be formulated for this particular feature. This would be fine, but the ability to create constraint pairs based on specific semantic features does not really bring any new information to this discussion at this point. That is to say that the formulation of constraints has already been discussed earlier in this chapter. The real question is how constraint formulation will interact with the discussion of question (C) because discussing variable behavior verbs has to do with the variant syntactic behavior of these verbs as well as their semantic features.

If violable constraint pairs were formulated using the diagnostics of unaccusativity and unergativity (i.e., the syntactic configurations) and then partially ranked, it seems likely that this floating constraint would be able to account for the variable syntactic behavior of the verbs in question. For example, some truth conditional formulation of the *X's way*-construction could be a partially ranked

constraint that would slide along a particular group of constraints in the hierarchy so that the correct candidate could be chosen regardless of the variable behavior.

Another example would be formulating a constraint using the resultative construction. For example, in English the resultative construction tends to be a good diagnostic of unaccusativity. However, agentive manner-of-motion verbs are able to participate in an unergative resultative construction when used with resultative adjective phrases headed with adjectives including *free* and *clear* or by the directional elements *apart* and *together* (Simpson 1983b) as shown in examples (4-5).

(4) Maggie ran *free of her kidnappers*.

(5) Tommy and Tara slowly swam *apart*.

According to Levin and Rappaport Hovav (1995), it is the type of resultative phrase that is important. These same verbs can use fake reflexives, but cannot be found in examples with resultative adjective phrases of the same sort found with unaccusative verbs. Consider examples (6-7).

(6) Abigail ran *herself* sore.

(7) *Abigail ran *sore*.

If a constraint were worded properly to account for this variant behavior using a resultative construction constraint, the constraint could be partially ranked in the hierarchy so that unaccusative verbs would satisfy the constraint; however, the constraint would be able to float in order that EVAL would be able to properly select the unergative candidate for agentive manner-of-motion verbs. Without the ability for this constraint-type to “float”, selection of a single optimal candidate would be difficult for variable behavior verbs.

However, there exists a scenario where the variable behavior of certain verbs could be predicted by Optimality Theory without the need for a floating constraint. Suppose in a given language evidence exists regarding the ranking of high and low ranked constraints, but there is no evidence bearing on the middle ranked constraints which are left unranked with respect to one another. If, for example, the high ranked constraints do not determine a verdict for a given verb and both candidates violate different middle ranked constraints, then the verdict is indeterminate for that verb.

CHAPTER 5: DISCUSSION OF ISSUES AND CONCLUDING REMARKS

5.1 Discussion of Issues

This research has made use of the available data regarding split-intransitivity in Swahili and Hittite and argues that using Optimality Theory as theoretical architecture for unaccusativity is a promising venture. One may ask why this dissertation research does not make use of the constraint hierarchy proposed in Legendre and Sorace (2003). That particular constraint hierarchy is configured in consonance with the Auxiliary Selection Hierarchy (Sorace 2000), which is based on a single diagnostic of unaccusativity. This dissertation examines the phenomenon as a whole from an optimality-theoretical perspective. It seems that if Optimality Theory is to be used as the theoretical framework for unaccusativity then it should be the framework for split-intransitivity as a whole and not just the theoretical architecture for individual diagnostics of unaccusativity.

Recall that the *2 (do not map onto an unaccusative configuration) simply means that an unaccusative structure is more marked than an unergative one. Additionally, it is true that configuring the universal constraint hierarchy without any constraints of the type *2/x that all of the *1/x constraints would be vacuously satisfied for all verbs and they would all be syntactically unaccusative (Legendre and Sorace 2003). However, although the use of the *2 constraint worked in the four sample tableaux presented in Chapter 2, notice that the only time that the *2 was the fatal violation was in Table 2.6 (copied below as Table 5.1). Now, if the *2 constraint is to be thought of as the do-not-map-onto-an-unaccusative configuration constraint, why is this a fatal violation for *être* 'be'? Since E is considered to be the unaccusative candidate, *2 did not map to it since it is the unaccusative configuration, which in effect satisfies the constraint. It should not violate it. It seems that the way that Legendre and Sorace (2003) have set up the constraint rankings that in this case the *2 satisfies the constraint for candidate E and vacuously satisfies the constraint for candidate A. This did not affect the outcome of the other example tableaux, since all of them selected E. However, the same argument holds true for all of the tableaux since the wording of the constraints and Legendre and Sorace's note regarding the formulation

of the *2 constraint (i.e., *1/E >> *2/E and *2/A >> *1/A) causes the *2 to satisfy the constraint for each unaccusative configuration. Therefore, none of the example tableaux in Chapter 2 (Tables 2.5-2.8) should have a constraint violation under the *2 constraint for the E. In other words, the wording of their constraints can only detect for E and should have incorrectly selected for E in Table 2.7 (copied below as Table 5.1). If they would have ranked a *1 (do not map onto an unergative configuration) and *2 constraint in one column and not ranked them with regard to one another, this should have been able to correctly select the proper candidates in all cases. See Tables 5.2 and 5.3. In Table 5.3, the *2 constraint is satisfied for E and vacuously satisfied for A, and because there is no 1 (Grammatical Form-subject) both E and A are vacuously satisfied, which still leads to the correct candidate selection.

Table 5.1 French Tableau: Existence of State: *Être* ‘Be’


	*1/TE	*2	*1/DIR	*1/ST	*1/- CONT	*/MOT
E		*!				
 A				*	*	

Table 5.2 French Tableau: Existence of State: *Être* ‘Be’ II



	*1/TE	*2	*1	*1/DIR	*1/ST	*1/- CONT	*/MOT
E			*!				
 A					*	*	

Table 5.3 French Tableau: Change of Location: *Arriver* ‘Arrive’ II

	*1/TE	*2	*1	*1/DIR	*1/ST	*1/- CONT	*/MOT
 E							
A	*!			*			*

5.2 Concluding Remarks and the Potential for Future Research

More research is necessary to fully develop a universal constraint hierarchy for split-intransitivity. The work done here barely scratches the surface of what is possible in the research of split-intransitivity from an optimality-theoretical perspective. Some issues that have come up in this work are, in part, due to the lack of information available on unaccusativity in Swahili and the finite set of information available for Hittite.

The fact there is a split in the behavior of intransitive verbs in Swahili, Hittite, and other languages cannot be overlooked. Most research in the area of split-intransitivity examines how the different properties of intransitive verbs split. The fact that there is a split in the behavior of intransitive verbs seems to be universal. Both semantic and syntactic features have been studied over the more than three decades that have passed since Perlmutter posited the Unaccusative Hypothesis. Still, researchers continue to be faced with the same central problem of split-intransitivity. So, where is the field in terms of its understanding of the Unaccusative Hypothesis? It is steadfastly seated in the moderate form (1b) of the hypothesis (Perlmutter 1978). Recall that the three forms of the UH (4a-4c) from section 1.2.3 (copied below as 1a-1c) are as follows:

- (1a) Because unaccusativity and unergativity vary from one language to another, there is no way to predict the classification of an intransitive verb as unaccusative or unergative.
- (1b) There are principles that predict the unaccusativity or unergativity for a particular class of intransitive verbs; however, there is another class of intransitive verbs whose unaccusativity or unergativity varies across languages.
- (1c) Unaccusativity and unergativity cannot vary cross-linguistically because there are universal principles that predict the unaccusativity or unergativity for all intransitive verbs in all languages.

It has been relatively simple to theorize about the “very unaccusative” and “very unergative” intransitive verbs; however, the task of figuring out how split-intransitivity works in terms of the “not so unaccusative” and “not so unergative” intransitive verbs is more difficult and extending those ideas to explain how split-intransitivity works across languages has been herculean.

Undoubtedly, there is great potential for further research into how Optimality Theory accounts for variable behavior verbs. If, perhaps, the extent of the universal nature of split-intransitivity is as Perlmutter proffers in the moderate form of the UH, then a theoretical framework like Optimality Theory should be able to handle the linguistic variance of split-intransitivity within and across languages. One of the possibilities for further research using Optimality Theory as theoretical

architecture for unaccusativity includes a thorough examination of a partial constraint ranking system to account for variable behavior verbs.

Continued research of unaccusativity in Swahili is needed not only to delineate fully the set of Swahili intransitive verbs into unaccusative- and unergative- type verbs, but also to add theoretically-driven research of split-intransitivity in Swahili to the field.

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APPENDIX A: HITTITE INTRANSITIVE VERBS THAT ATTEST WITH SUBJECT CLITICS

Middle decausatives attested with subject clitics:

irmahya- ‘get sick’

išiyahḥ- ‘be revealed’

lā- ‘be removed’

luluwāi- ‘survive’

tamenk- ‘be attached’

tuske- ‘please’

wešš- ‘be put on’

zahḥ- ‘be struck’

Middle reflexives attested with subject clitics:

ārra- ‘wash’

kunk- ‘set up’

munnāi- ‘hide’

unuwāi- ‘adorn’

Change-of-State verbs attested with subject clitics:

ḥuršakniya- ‘burst’

kiš- ‘become’

mayant-ešš- ‘grow up’

mī-ešš- ‘become gentle’

parkaw-ešš- ‘become pure’

šupp-ešš- ‘become holy’

zeyā- ‘be cooked’

Stative verbs attested with subject clitics:

ḥuišw-ē- ‘be alive’

išṭandāi- ‘linger’

papr-ē- ‘be impure’

tarra- ‘be able’

Psychological verbs attested with subject clitics:

aršaniya- ‘be envious’

katimmiya- ‘be angry’

šā- ‘be angry (with)’

Direction-of-Motion verbs attested with subject clitics:

mummiya- ‘fall’

parš- ‘flee’

piddāi- ‘flee’

šamen- ‘withdraw’

tiya- ‘step, take one’s place’

watku- ‘flee, jump’

Miscellaneous intransitive verbs attested with subject clitics:

ašandulāi- ‘garrison’

ḥandanda- ‘act providential’

ḥūlla- ‘fight’

uwaya- ‘do harm’

weške- ‘weep’

APPENDIX B: HITTITE INTRANSITIVE VERBS THAT NEVER ATTEST WITH SUBJECT CLITICS

Miscellaneous intransitive verbs never attested with subject clitics:

arkuwāi- ‘plead’

aruwāi- ‘bow’

gimmantariya- ‘spend the winter’

hāš- ‘open’

palwāi- ‘cry out’

šūwaya- ‘look’

wašta- ‘commit an offense’

Detransitive verbs never attested with subject clitics:

allapahḫ- ‘spit (on)’

aniya- ‘work’

eku- ‘drink’

ḫuek- ‘cast a spell’

kuen- ‘kill’

mema- ‘speak’

mimma- ‘refuse’

peda- ‘bring’

šipant- ‘libate’

tuwarnāi- ‘break’

walḫ- ‘strike, attack’

zinna- ‘end’

VITA

Tina M. Villa was born in Chicago, Illinois to Robert J. and Caroline M. Villa. She is the second eldest of four children who have all had the great fortune of earning Master's degrees in various areas of study. Tina decided to continue her education after earning her Master's degree.

After finishing her degree at Good Counsel High School in 1987, Tina spent several years away from school working in different types of jobs. She finally decided to go to college in 1996, which began her career as a student at Northeastern Illinois University. In 1999, Tina moved to Cuernavaca, Mexico to study Spanish for two years. In 2001, she returned to Northeastern Illinois University where she earned a Bachelor of Arts degree in 2004 with a major in Spanish Language and Literatures and minors in both Linguistics and Mexican and Caribbean Studies. She continued at Northeastern Illinois University and earned a Master of Arts degree in Linguistics in 2006. After graduation in 2006, Tina moved to Baton Rouge, Louisiana to earn a Doctor of Philosophy degree in Linguistics at Louisiana State University. In December of 2013, Tina moved back to Chicago, Illinois to accept an instructorship position.

After Fall Commencement 2014, Tina plans to spend time with her family and friends during the holiday season before beginning her first job in the spring as a professor in Chicago, Illinois.